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THE
AMERICAN
AGRICULTURIST.

FOR THE
Farm, Garden, and Household.

"Agriculture is the most Healthful, the most Useful, the most Noble Employment of Man."—WASHINGTON.

VOLUME TWENTY-EIGHT--FOR THE YEAR 1869.

NEW-YORK:
PUBLISHED BY ORANGE JUDD & CO.,
245 BROADWAY.

CONTENTS OF VOLUME TWENTY-EIGHT.

The stars (*) in the following Index show where engravings occur. Articles referring directly or indirectly to Bees, Cattle, Insects, Manures, Trees, Weeds, etc., will be found indexed under these general heads.

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AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

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ORANGE JUDD & CO.,
PUBLISHERS AND PROPRIETORS.
Office, 215 BROADWAY.

ESTABLISHED IN 1842.

Published also in German at \$1.50 a Year.

{ \$1.50 PER ANNUM, IN ADVANCE.
SINGLE NUMBER, 15 CENTS.
4 Copies for \$5; 10 for \$12; 20 or more, \$1 each.

Entered according to Act of Congress in December, 1863, by ORANGE JUDD & Co., in the Clerk's Office of the District Court of the United States for the Southern District of New-York.

VOLUME XXVIII.—No. 1.

NEW YORK, JANUARY, 1869.

NEW SERIES—No. 264.



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MATERNAL SOLICITUDE.—*Drawn and Engraved for the American Agriculturist.*

A frisky young pig is not more unlike a staid old porker than is a baby elephant unlike the mature animal. A young elephant is a playful, odd-looking thing, appearing more like an animated mass of India-rubber than like an animal. It is tamed with the greatest ease, and those who have lived in the East inform us that, as it increases in size, its familiarity becomes oppressive. Petting a young elephant is all very well, until the animal gets large enough to pet

its owner, and strength of trunk accompanies strength of affection. When this occurs, the favorite must be sent away. Those who have described the habits of the elephant speak of the great care of the mother for her young; she will brave any danger in order to protect her offspring. The artist in the above striking picture shows the mother interposing her body between the javelins of the hunters and her child. It seems a pity that so noble a beast should be

slaughtered for its tusks, and it is still more to be regretted that large numbers should be killed for sport. The tusks, which are much larger in the male than in the female, weigh from 50 to 150 pounds; the largest recorded weight is 350 pounds. To supply the demand of the American market for ivory, about 4,000 elephants must be killed each year, and about twice that number are required to furnish the amount of ivory annually imported into England.

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AMERICAN AGRICULTURIST.

NEW-YORK, JANUARY, 1869.

We have hosts of new readers, who join the ranks of old and well-tried ones, for whom we have the most friendly regard. To old friends, and to all who may join us, we begin the season and this new volume with the heartiest wishes of a HAPPY NEW YEAR.

One year of work is done and another begins. Merchants and mechanics get rich and retire; professional men generally, like old soldiers, repose on their laurels when the hardest part of their life's warfare is over; but the farmers, as a class, work on, and die in the harness. We might learn many a lesson from commercial men, who, to be sure, labor too exclusively for wealth, and think too little of health, intellectual enjoyment, and the comforts of life, and our lives would be much more comfortable if we were more thorough as business men. Not one farmer in five hundred knows how he makes his profits, or what they are. We know that we gain a fair living, that we get money from the sale of beef, or sheep, or corn; but what pays the best? On what do we expend labor to the greatest advantage? How is money invested in the farm or its appointments made to pay the best interest? We ought to have records of cash and labor expended, of materials and time consumed, that we can refer to for a satisfactory solution of such problems. How many of us can do so? Few have even an accurate record of the days' work hired, and the work done, and we believe that in a majority of cases where a good account is kept, the wife has a hand in it. All honor to such wives!

We stand at the beginning of a new year, and look forward and backward, like Janus with two faces, from whom this month is named. Our account-books, journals, and memorandum-books should be for us the retrospective face, and our course for the future should, as far as possible, be guided by experience; not that vague experience which is like a half-forgotten dream, and is well remembered only when a blunder twice made wakes us up to the knowledge that it is too familiar; but an experience aided by a well-quickened memory, made clear and definite by memorandums, jotted down upon the spot. Such is a safe guide, and we may all have it for next year if we have it not now.

Hints about Work.

Building.—Build, or make such alterations as may be necessary in old buildings. Trees may be felled, saw-mill logs be carted, and the lumber be piled up to season, if one is not yet ready to build.

Fuel.—If there is not a year's stock on hand, prepare it now without delay. Labor is cheaper, and many swampy places in the woods are accessible now, that cannot be reached in summer. If the wood is to be marketed, it is much easier to cart when well seasoned. If to be used at home, it makes a much hotter fire, and makes the good wife "mistress of the situation" when she has to prepare an early breakfast or an extra meal. Dry wood is an excellent means of grace in a household, promoting good temper and cheerfulness. Pack the wood-shed full, or if that institution has not yet been established, pile the wood in regular tiers, and put a few boards or slabs on top, to shed rain.

Clearing Land.—In open winters, forests and brush pastures can be cleared. But in attempting to clear wood-land, a man should consider if wood is not the best crop the land is capable of producing. Rocky land is sometimes cleared of trees to the great detriment of the farm. Pastures should always be kept clear of brush. It is directly in the way of grass—the great source of profit on all grazing farms.

Frost and Snow.—Keep a sharp look-out for damage from these sources. If the frost penetrate the cellar pipes may be burst and vegetables be injured. Bank the cellar walls well with earth or with snow, which is a good defence against extreme cold. Clear all snow from low, flat roofs, which a

great weight might crush, or where water banked up by drifts might come through. Break out the roads immediately after every snow fall with ox teams and inverted sleds. They are much more easily broken while the snow is fresh.

Ice Paths.—Severe falls may be prevented by sprinkling the slippery places about the house and yard with coal ashes, sand, or sawdust. The last is the most cleanly, and is easily obtained at saw-mills in the country, as well as in large towns.

Ice-houses.—We wonder that ice-houses are so rarely found upon the farmer's premises. They can be built of materials found upon the farm in a very cheap, substantial way, and would save many times the interest of the money invested every year. Buy a few nails, get boards and joists from your wood lot, and try your hand at an ice-house, filling the sides with sawdust or planing-mill shavings. See plans in back numbers of the *Agriculturist*. If the ice-house is ready, fill it as soon as you have ice six inches thick. The first ice formed is quite sure to be clear and solid, and is often the best of the season.

Fencing Materials.—Splitting rails and making posts is legitimate business for winter, and on most farms a few more are always wanted. Chestnut splits readily and endures exposure to the weather remarkably well. White cedar is still more durable, and the swamps are often accessible only in winter.

Draining can sometimes be attended to, if the winter is open. Springy land seldom freezes so deep that drains may not easily be dug. No work is more satisfactory in its results.

The Digging of Muck and Peat can sometimes be best done when the surface is frozen—making a solid bridge for carting it off. One can never have too large a stock of this on hand. Make piles of it near the barns, stables, and sties.

Manures.—Keep all the sources of supply, the yards, sties, and privies, well supplied with absorbents. The great error in all our farming is the neglect of the manure heap. Study constantly to increase this as the grand secret of success in farming. Keep your animals all stabled, or in close sheds, that all the manure may be daily thrown into heaps, and mingled with muck and other absorbents. Keep the manure under cover, if possible, and if not, compost it in heaps. From the manure of fowls, and night soil, an excellent fertilizer may be prepared for hills and drills. Almost all crops are benefited by these applications.

Fowls should have special attention. They can shift for themselves in summer if they have range enough, but now they are dependent upon man for the supply of all their wants. They should be regularly fed with a variety of food, and their roosts be kept scrupulously clean. If they have warm quarters or the run of a cold grapey, a few may be set the last of the month to bring early chickens. Animal food should be provided, if you wish fresh eggs. The breeding birds should now be selected for all kinds of poultry. Old geese should be chosen, and turkeys of two years old are much better than young ones. Old hens, as a rule, make better mothers than pullets.

Swine should have dry, warm sties, with well-littered yards. Breeding sows should be kept in good flesh, and as they approach the time of farrowing, each sow should have a pen by herself, with a plenty of clean straw. Store swine and pigs should be fed generously, and be kept growing. There is no profit in half feeding animals.

Sheep want good-sized yards, with deep sheds, opening to the south, to which they can have access during the day, and in which they can be confined at night. The ewes should not be suffered to lose flesh at all. Some farmers do a good business in fattening sheep for the spring markets. The pens should be kept constantly dry with absorbents. In feeding fattening sheep, see that each one gets a due allowance. The strong may be as much injured by over-feeding as the weaker ones by too little.

Horses.—Examine the shoes frequently and see that they are kept sharp. The best smooth-shod

animal is almost helpless on the ice. Horses do better without blankets, unless immediately after exercise. Break colts to the halter, and accustom them to the saddle and to gentle handling.

Cows.—It is poor policy to stint the feed of dry cows. Good keeping will tell upon the calf, and in the milk-pail next summer. Keep them in warm stables, and water four times a day. The use of the brush and card occasionally will pay. Roots come to a good market in their mangers.

Milk Cows should have succulent food, and meal, if you wish them to show all their good qualities. Feed generously, and keep the flesh increasing, as well as the milk.

Beves.—Most of our beef is made in summer pastures, but in the districts where corn and oil-cake are cheap, stall feeding will pay. They should have a variety of food, and roots are valuable. The fattening animals should be kept quiet, and in warm, well-ventilated stables. It is better that they should have but one attendant, and that they should be fed at regular hours.

Young Cattle should have as good treatment and quarters as the cows and oxen. The rapid growth they are making when they come in from grass should be kept up by good hay and roots. The bog hay and frozen butts, on which they are so often starved, are better used for bedding and the manure heap. Give them full, generous feed, and they will astonish you by their rapid growth.

Work in the Horticultural Departments.

As many new readers will look to these columns for hints, we will say a word about them. They are intended to point out the things necessary to be done, and give suggestions as to the way of doing them. Even the most experienced need a reminder of this kind, especially when there are many details to be looked after. One of our largest gardeners has a record made of each day's doings at his establishment, and with all his extensive experience he finds it necessary to refer frequently to this diary as a guide. "But your notes are the same thing, year after year," some may say. They are, in part, just as the seasons are the same, year after year. They derive their chief value from speaking of certain things at a certain time, and so far one year is like another. The warp remains the same, but the woof is constantly changing. The whole is always re-written, and such improvements as larger experience suggests are worked in, and often new processes are given here instead of devoting special articles to them. While all vegetation is in repose and our favorites are sleeping beneath the snow, we can study what will be best to do for them when the time of awaking comes. Every intelligent gardener will have some standard work upon the subjects in which he is specially interested. A glance at our book list will show that there are a plenty of such works. He is a poor gardener who does not do better this year than he did last, whether his operations extend over acres or are confined to the narrow limits of his door yard.

Orchard and Nursery.

The first thing to be considered is the care of young trees already planted.

Domestic Animals, if allowed access to a young orchard, will do much damage. Have fences and gates in good repair, to keep out all intruders.

Mice.—A mound of earth a foot high should have been formed at the base of each young tree; if this was not done, see that there is no litter near the tree to afford them shelter. After a snow fall, tramp the snow down solid around each tree, whether it has a mound of earth or not. This is some trouble, but if you plant a tree, it implies a contract to take care of it. Those having little trouble with their trees are seldom bothered with fruit.

Rabbits are often worse than mice. The old notion that rabbits would not touch a tree that had been rubbed with the flesh of one of their fellows has

its foundation in the fact that the animals have an aversion to blood. The blood of pigs or any other animal, sprinkled on the lower part of the tree, will answer as well as rabbit's blood. Cloth or stiff packing paper wrapped around near the ground and as high up as a rabbit will reach will keep them off; this is slow work where there are many trees.

What to Plant, if a new orchard is to be set in spring, is worthy of serious consideration. Many think that they have only to determine what are the best varieties and order them. The real question is, What are the best varieties you can grow? Get the experience of neighbors who grow fruit, or of the nearest intelligent and reliable nurseryman. If about to plant for market, recollect that productiveness, regularity in bearing, showiness of fruit, and an ability to bear transportation, are all of as much or more importance than quality. Do not be taken with the highly-colored pictures shown by travelling salesmen.

Cions should have been cut before severe weather, but may be cut now during a thaw. See note on their preservation in "Basket."

Insects.—Look over the trees, and if there appears to be a swelling just below the end of a twig, there will probably be found a cluster of the eggs of the tent caterpillar securely glued around it. Cut off and burn every one of these that can be found and there will be few nests to destroy next spring.

Pruning.—Winter pruning, except on young trees and nursery stock to bring them into shape, is not generally approved. Still it is better to remove the useless and crowded limbs of an old tree at this season than to neglect it altogether. Make a clean cut and cover it with melted grafting wax.

Root Grafting is done at any time during the winter, the stock and cions having been stored in an accessible place. Do grafting at the "collar" of the stock. Bits of roots should not be used.

Manure.—Cart out and spread upon the orchard.

Fruit Garden.

Every one who has land enough should have a separate enclosure for fruit. In a mixed garden, where vegetables and fruit are grown together, neither can be grown to the best advantage. The land should be drained, if at all disposed to be wet, and the soil deep, well worked, and of moderate richness. The care to protect the trees, etc., from injury is the same as noted under Orchard.

A **Succession of fruit** is to be planned for. By a proper selection a supply may be had every day through the fruiting season. Strawberries, raspberries, currants, blackberries, grapes, etc., are rarities with farmers, rather than an essential part of their every-day food. With a climate that allows all of these to be produced with the greatest ease, how many thousands fail to enjoy them! Let us have less meat and more fruit.

Kitchen Garden.

In the Southern States, whenever the condition of the soil will allow it, the hardy, early vegetables are sown in succession from January to April. The hardy vegetables include beet, carrot, parsnip, parsley, radish, turnip, onion, leek, lettuce, cress, cauliflower, cabbage, spinach, etc. Tender vegetables, such as cucumbers, melons, beans, tomatoes, etc., can only be sown with safety in the open ground, at corn planting time, or when the peach is in full bloom. These rules answer for any latitude.

Seeds.—Their quality and integrity are of the greatest importance. It is better to be at any trouble and expense to get good seed, true to its kind, than to take that which is doubtful for nothing. Purchase early of reliable dealers only. Seeds go by mail at the rate of two cents for four oz.; if in doubt about the quality offered by home dealers, send to those of known reputation.

The Vitality of Seeds can only be positively ascertained by sowing a counted quantity in a box of earth in a warm room. If three-fourths come up, the seeds may be considered of average good qual-

ity. Some seeds must be renewed every year, such as onions, parsnips, and leeks. The following should not be over two years old: beans, peas, peppers, carrot, egg-plant, okra, salsify, sage, and other sweet herbs. Those considered safe for three years are, asparagus, endive, lettuce, spinach, radish and parsley. Those which are good at the end of four years are, cabbage and its relatives, such as cauliflower, etc., turnips, and celery. Those good from five to ten years are melons, cucumbers, and all of the squash family, beet, and tomato.

Hot-beds for raising seedlings are to be started about six weeks before the time at which it will be safe to set out the plants. Sashes should be got ready; paint, if need be, and replace broken lights. Make new sashes; the usual size is 6x3 feet.

Straw Mats are of great use in covering hot-beds and frames at night. There are several ways of making them, and one of the simplest is to stretch five cords—strong twine or "marine," lay on the straw evenly, with the but ends towards the edges of the mat; then put above the straw five other cords directly over the lower ones, and sew through the straw with a coarse needle and twine, catching both cords. The cords may be stretched on a frame made for the purpose; the mats should be a foot longer than the sash and of its width or a half wider, so that two mats may cover three sashes.

Cold Frames.—Air in clear weather whenever the temperature is not below 20° in the shade. If snow covers the glass after a mild spell, remove it, but if the plants are already frozen, let it remain.

Manure is a thing of which the gardener cannot have too much. Carting is better done now than later. Place the manure in good-sized heaps, and when it begins to "smoke" turn it over. The heaps should be large enough to prevent freezing.

Flower Garden and Lawn.

But little can be done out of doors. Where improvements are contemplated, a plan should be drawn to a scale, and sufficiently large to serve as a guide in working. It will be found when the time comes to execute it that operations will be wonderfully facilitated by its use. Not only should walks, beds, etc., be properly laid down upon the plan, but the places for trees, shrubs, etc., should be indicated. Do all the thinking now and there will be no time lost in deciding where to place things at planting season. Where much money is to be expended on a place it will be cheaper in the end to employ a landscape gardener to make a plan.

Cold Frames, or cellars in which plants are stored for the winter, must be aired when the weather is not too cold. Keep the temperature uniformly low and just above freezing.

Trellises, Stakes, and all the little appliances that will be needed in spring, should be made and repaired while there is leisure.

Snow is apt to injure evergreens and dense shrubbery; shake out the accumulations before they become icy. Drifts around low-branching evergreens are apt to break off the lower branches as they settle, and should be shovelled away.

Green-house and Window Plants.

This division was formerly headed Green and Hot-houses. As very few amateurs grow hot-house plants proper, they generally falling to the care of professional gardeners, we shall leave them out and give more space to hints about window plants.

Temperature with house plants is less readily adapted to their wants than in the green-house. Very few plants will bloom below 60°, though they will keep healthy at a much lower degree.

Air is to be given in the green-house whenever the ventilators can be opened with safety. Window plants need a change of air and should have it whenever it can be given without chilling them.

Insects are easily kept under by fumigating.

Dust.—Arrange some kind of a shield of cloth or paper to put over the plants while sweeping.

Water is to be given only as the plants need it.

AMERICAN AGRICULTURIST.

ORANGE JUDN & CO., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies: Four to nine copies, \$1.25 each: Ten to nineteen copies, \$1.20 each: Twenty copies and upwards, \$1 each. Papers are addressed to each name.

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How?—Answer.—Here is a good paper, full of carefully prepared, practical information, and containing at least \$12,000 worth of fine engravings during the year. It is useful to everybody. Everybody who takes it, besides the pleasure derived, will be pretty sure to get from the thousand columns of reading matter some hints, some suggestions, or some trains of thought started, that will in the end repay him tenfold, very often a thousand fold, for the small subscription price.

Well, it only needs one or more persons in the vicinity of every post-office to take a copy of the paper and show it, and explain its value, in order to get a large number of people to subscribe for and receive it regularly.—To every person who does so, and forwards to us a dozen or more subscriptions, we present a first-rate article from our premium list, (see table in 3rd column) just such an article as he or she may desire, either for personal use or for sale. (Many persons canvass as a business, receive the premiums, sell them for cash, and thus secure a large salary.) By large cash purchases, at wholesale prices and less, and by advertising arrangements with manufacturers, etc., we are able to pay much larger commissions to canvassers in the form of premiums, than we could possibly give in cash, while the premium articles are fully worth the prices named for each. Indeed, they are often worth more, for we carefully select them, guarantee their quality, and those getting them through us as premiums, avoid all risks of dealing with unreliable parties, or of getting poor articles. To understand how we can afford such large premiums, and why we give them, read the "EXPLANATION" in the next column.

Who Get the Premiums?—Answer.—Men, women, and children, in every station. Our books show that many Ladies have secured sewing machines etc., for their own use, while others support their families by the sale of articles they receive as premiums from us for clubs of subscribers. In this way, by two or three months' work they have realized from \$250 to \$700 each. One lady canvassed in Western New York and Ohio last year, and made about \$1,500 in six or seven months; and she has secured about that amount for subscribers already sent in for 1869. These are large sums, easily attainable by those having tact, energy, and perseverance; but smaller sums of \$20 to \$500 are very easily secured by a large multitude of people. There is hardly a Post-office where there are not people enough to furnish a club of a dozen or more, while, in a large majority of neighborhoods and towns, there is abundant room for two, three, four, or five premium clubs of twenty to fifty or more names. We have received from 500 to 1,100 subscribers from single post-offices in larger towns and cities, and 50 to 500 from single county offices.

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Farmers, Mechanics, Clergymen, Teachers, Clerks, Post - Masters, Boys and Girls, all have special facilities for gathering Premium Clubs of subscribers, and securing our Premiums. Schools and Churches often unite and get the Melodeons for the Church, Sunday or Week-day School Rooms, or the Cyclopaedia, or Sewing Machines, or Watches, etc., for their Pastor or a Teacher. Many Boys and Girls get the Dictionaries, and other articles for themselves. LOOK all through the Table, and you will see there is something provided for everybody. There is enough of all these articles (except the animals) to supply everybody.

It is Easier than one would suppose, to get up a premium list! Hundreds have written thus, after a little experience. Take a copy of the paper, show what it is, how much it gives in a year for less than half a cent a day, or less than three cents a week, and few will fail to make so good an investment. They will thus be benefited, and you will soon have names enough to secure the premium for your trouble.—TRY IT!.....To-day.

See Premium Regulations on next Page.

EXPLANATION.—Our immense circulation enables us to do things on an extensive scale, and doing this, adds again to our circulation. We spend large sums for engravings, for collecting information, etc., and it costs no more for all these to supply half a million subscribers than it would half a thousand. There is but one office, one set of editors, engravers, etc., to be supported, and we can thus furnish a superior paper at an exceedingly low price.... We expend all the subscription money, and tens of thousands of dollars more, in simply getting up and furnishing the paper itself, and yet make a satisfactory profit, besides paying all the premiums. Our unprecedented circulation makes every line very valuable to advertisers, who gladly pay a large price to reach so many people—especially as they know we shut out humbugs and unreliable parties from our advertising columns. So our advertisements furnish money to pay premiums; the premiums get more subscribers; more subscribers add to the value of the advertisements, and that brings us more money for more premiums. The whole thing is simple, and only requires courage and enterprise to carry it out. Everybody gets a very good and very cheap paper; and thousands of people get good premium articles—just

such as they want for themselves or for sale—simply by making up clubs of subscribers. It is easily done by those who take hold of the work with courage and determination to succeed. Some have had poor success at the first trial, and afterwards became very successful and realized large sums. Your opportunity to do this, Reader, is just as good as that of any other person.

[In this table are given the regular cash prices of each article, and the number of subscribers required at \$1.50 a year, to get it free, also at the lowest club rate of \$1 a year. For full descriptions of the articles see extra sheets, sent free.]

Table of Premiums and Terms, For Volume 28—(1869).

Table with columns: No., Names of Premium Articles, Price of Premiums at \$1.50, and Number of Subscribers required at \$1.50. Includes items like Short-horn Bull, Sheep Machine, and various tools.

See Premium 106 on page 32.

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-two Premiums, Nos. 29, 30, 31, 61, 62, 63, 64, and 76 to 100 inclusive, will each be delivered FREE of all charges,

by mail or express, (at the Post-office or express office nearest recipient), to any place in the United States or Territories. —The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance specified.

PREMIUM REGULATIONS.

Read and carefully Note the following: (a) Get subscribers anywhere; all sent by one person count together, though from one or a dozen different Post-offices. But....(b) Say with each name or list of names sent, that it is for a premium list, and we will so record it....(c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. Any time, from one to four months, will be allowed, to fill up your list as large as you may desire. The premium will be paid whenever you call for it....(d) Send the exact money with each list of names, so that there may be no confusion of money accounts....(e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer the premiums....(f) Specimen Numbers, Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, for every extra copy of the paper costs, with the 2c. prepaid postage, about 12 cents....(g) Remit money in Checks on New York Banks or Bankers payable to order of Orange Judd & Co., or send Post-Office Money Orders. If neither of these is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

If from any Cause one fails to get the larger premium desired, the names can be used for a smaller one.

Description of the Premiums.

A FULL DESCRIPTION of all the premiums is given on an extra sheet, a copy of which will be sent free to every one desiring it. For New Premium 106, see page 32. We have only room here for the following:

No. 42—Clothes-Wringing Machine.

—A very useful, time-saving, strength-saving, clothes-saving implement, that should be in every family. The wringing of clothes by hand is hard upon the hands, arms, and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the garments.

Nos. 76 to 81—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-seventh Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are put up in clean numbers, with full index to each volume.—They are profusely Illustrated, the Engravings used in them having alone cost about \$30,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from 16 to 27.

Nos. 82 to 87—Bound Volumes of Agriculturist.—These are the same as Nos. 76 to 81 above, but are neatly bound in uniform style, and cost us more for the binding and postage. Sent post-paid.

Nos. 88 to 99—GOOD LIBRARIES.

—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any one of the premiums 88 to 99 may select any books desired from the list on page 33, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post-Office, or Express office, as we may find it most convenient to send them.

No. 100—General Book Premium.—Any one not desiring the specific Book premiums, 88 to 99, may select Books from list on page 33, to the amount of 10 cents' worth for each subscriber sent at \$1: or 30 cents for each name sent at the (ten) club price of \$1.20 each: or 60 cents' worth for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

See Premium 106 on page 32.

New York Live Stock Markets.—

Table with columns: WEEK ENDING, Beesves, Cows, Calves, Sheep, Swine, Tot'l. Rows include Nov. 30th, Dec. 7th, 14th, and totals for four weeks and previous 5 weeks.

The above table gives the weekly receipts for the four weeks ending Dec. 14th, the total number of all kinds for each week, also the number of each kind for the four weeks, as well as the sum of all kinds for the month.

The cattle trade has been gradually improving since our last report. The stock has averaged at least two per cent better in quality, and prices have advanced a little. Most of the cattle for "Thanksgiving trade" were good, and some of the best brought as high as 17c. per pound. The steadily increasing cold weather since has kept the market fully up to the prices paid in Thanksgiving week, and good, fat stock were selling for 16 1/2 @ 17 1/2 c. per lb. at the close of our report. The large run for the week ending Nov. 30th and the very low prices are no guide. Most of the stock for that week was very poor, and not 200 decent bullocks were to be seen in the whole 7,000. This great rush of stock to market was caused by the reported advance of 1c. per pound in price, and a little storm of snow West, obliging farmers to house their stock or sell, and they chose the latter course; consequently "State Hoppers" were plenty and the yards full of two-year-old steers, dry cows, oxen and bulls. Drivers expected a little decline in price after a holiday week, for the extra quantity of poultry in market at these times must be sold, but no one looked for such a rush of thin stock on a perfectly flat market. Prices are much improved for the week ending Dec. 14th, and quality enough better to place the advance at least 2c. per pound. The following list gives the range of prices, average prices and figures at which the largest lots were sold.

Table with columns: Nov. 23d ranged 10@17c, Av. 14c, Largest sales 13 1/2 @ 16, do. 30th do. 8@15c, do. 13c, do. do. 12 @ 14 1/2, Dec. 7th do. 9 1/2 @ 17 1/2 c, do. 14 1/2 c, do. do. 13 @ 16, do. 14th do. 8 @ 15c, do. 14 1/2 c, do. do. 10 @ 16

Extending the week ending Nov. 30 from our estimate, it is safe to say that prices have advanced at least 1c. per pound and that the quality of the beef is much better than last month. Milch Cows are scarce and prices high. Indeed there is very little change since our last report. Good milkers are constantly called for and go off quickly at \$80@\$110 each. Some have sold as high \$115@\$125, but these were extra milkers or "fancy cows." Veal Calves have not been so plenty this month, but quite enough so to sell well in a market full of other stock. Prices remain about the same as last reported, ranging 9@11 1/2 c. for common and 12@13 1/2 c. for good. Sheep and Lambs are still plenty; some weeks they exceed the demand and trade drags heavily. Prices have varied a little from day to day, and many sheep have been sold by the head as low as \$2.50@2.75 each. The majority of the stock is poor, and not fit for market. Those that had any fat on them and sold by the pound ranged 4@5 1/2 c. for sheep; lambs 6@7 1/2 c. per pound. Swine are coming in thick and fast and trade has been dull all the month. Prices are a little better at the close of our report. For the week ending Nov. 30th the large run of over 40,000 put prices down as low as 7c. per pound, live weight, for good, fair goods. The cool weather, however, and a little falling off in arrivals soon advanced the price somewhat and now, Dec. 14, prices range from 8@8 1/2 c. per pound, and trade is more lively. A few dressed hogs are coming in and sell for 10 1/2 @ 10 3/4 c. per pound.

Commercial Matters—Market Prices

Gold has advanced since our last, under a more active demand, chiefly from speculative sources; it closes firmly at 135 1/2. There has been a livelier inquiry for most kinds of Breadstuffs since our last, for home use, shipment, and on speculative account; and prices have been generally quoted higher. Flour, Winter Wheat, and Western Oats, close buoyantly, while Spring Wheat, Corn, Rye, and Barley, leave off in favor of buyers. The receipts have fallen off materially since the closing of the canals, early in the current month, and are now quite limited in amount, daily. There has been more activity in the Provision line, especially since Dec. 1st, but at variable prices, most articles closing strong and buoyant at our quotations.... Cotton has been more sought after,

closing a fraction higher.... Wool has been in moderate request at steady rates.... Tobacco, Hops, and Seeds have been lightly dealt in.... Hay closes briskly at an advance.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for the month ending Dec. 15, 1868, and for the corresponding month last year:

TRANSACTIONS AT THE NEW-YORK MARKETS. RECEIPTS, Flour, Wheat, Corn, Rye, Barley, Oats. SALES, Flour, Wheat, Corn, Rye, Barley, Oats. Comparison with same period at this time last year. RECEIPTS, Flour, Wheat, Corn, Rye, Barley, Oats. SALES, Flour, Wheat, Corn, Rye, Barley, Oats. Exports from New York, Jan. 1 to Dec. 14: Flour, Wheat, Corn, Rye, Barley, Oats. Stock of grain in store at New York: Wheat, Corn, Rye, Barley, Oats, Mill. Receipts at tide water at Albany to Dec. 7th: Flour, Wheat, Corn, Rye, Barley, Oats.

COBBENT WHOLESALE PRICES.

Table with columns: Nov. 14, Dec. 15. Rows include PRICE OF GOLD, FLOUR—Super to Extra State, Super to Extra Southern, Extra Western, Extra Genesee, Superior Western, RYE FLOUR, CORN MEAL, WHEAT—All kinds of White, All kinds of Red and Amber, CORN—Yellow, Mixed, OATS—Western, State, RYE, BARLEY, HAY—Bale #100 lb., LOOSE, STRAW, #100 lb., COTTON—Middle, HOPS—Crop of 1868, FEATHERS—Live Geese, SEED—Clover, Timothy, Flax, # bushel, STARCH—Brown, MOLASSES, Cuba, COFFEE—Rio, (Gold, in bond), TOBACCO, Kentucky, &c., Seed Leaf, WOOL—Domestic Fleece, Domestic, pulled, California, washed, TALLOW, OIL—Coke, # ton, PORK—Mess, # barrel, Prime, # barrel, BEEF—Plain mess, LARD, in tins, & barrels, BUTTER—Western, State, CHEESE, BEANS—# bushel, PEAS—Canada, in bond, Eggs—Fresh, # dozen, POULTRY—Fowls, Turkeys, POTATOES, new—# bbl., APPLES—# barrel, SWEET POTATOES, # bbl., CRANBERRIES, # barrel, TURNIPS—# bbl., CABBAGES—# 100, ONIONS—# bbl., SQUASHES—# bbl., GRAPES—# pound, QUINCES—# bbl., VENISON—by the carcass.

Advertisers who have used our columns for years past are unanimous in the statement that nowhere else do they receive so good a return for their money. This is owing, not only to the great circulation, but also to the fact that we are careful to admit none but those believed to be entirely reliable, so that subscribers are not afraid to send their orders. The same rule will be observed in future, and as our circulation is rapidly increasing, while at present the advertising rates remain the same, those about announcing their business to the public can do so in these columns to great advantage.



containing a great variety of items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Mark All Subscriptions sent in, as *New or Old*.

How to Remit:—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us *without any loss*.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. *Observe, the Registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money and seal the letter in the presence of the postmaster, and take his receipt for it.* Letters sent in this way to us are at our risk.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, *three cents*, each quarter, or *twelve cents*, yearly, must be pre-paid at the Post-office where the paper is received.

Bound Copies of Volume XXVII (1868) are now ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (16 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume, (50 cents extra if returned by mail.) Missing numbers supplied at 12c. each.

CLUBS can at any time be increased by sending for each addition the price paid by the original members, if the subscriptions all date at the same starting point. The back numbers will, of course, be sent to added names.

Editorial.—Col. Geo. E. Waring, author of *Draining for Profit and Health, Elements of Agriculture*, and well known as a successful Agricultural Engineer, has become a member of the Editorial Staff of the *Agriculturist*. Col. W. will contribute articles, not only upon certain subjects which he has made specialties, but upon improved agriculture in general. He has a farm, where, with ample means to test the matter, he proposes to show that high farming will pay as a profitable investment of capital, and his experience will be given to the readers of the *Agriculturist*. We make this announcement with no little pleasure, and our readers will take it as an indication of the desire of the publishers to give them the best paper that can be made.—[Eds.]

To Correspondents.—This month we address a large number of readers for the first time, and we wish to give a few hints that may serve to make our future intercourse most profitable. We are always glad to hear from our readers, if they have anything to communicate that will interest or instruct others. Questions on subjects of general interest are always welcome. It is not always practicable to answer each correspondent personally, so we often reply in a general article. Queries are useful, as serving as an index to the wants of our readers. Where an answer is desired, enclose a stamp—and no more—for return postage. We answer such letters of this kind as we are able. Some are unanswerable. Do not ask us to do things quite out of our line, such as finding places for boys, looking up inheritance of property, selling consignments of produce, and the like. We cannot attend to such matters. Do not ask our opinion of any of the many advertising doctors—we don't know any of them, and don't mean to, if we can help it. Please write upon one side of the paper only, and do not mix up several subjects. If there is more than one subject, leave a space between them, so that they can be cut apart, and each referred to the proper editor. We cannot be expected to write treatises for the asking. A young man about engaging in gardening wrote us, not long ago, asking us to "tell him all we knew about raising vegetables." Volumes already printed are to be had much cheaper than they can be written. In describing

any implement or contrivance, do not be afraid of trying to make a sketch, no matter how rough it may be. A few scratches with a pen or pencil will often tell more than a page of explanation. Don't apologize for writing, and oblige us to read a half a page before the point is reached. Always give name and address; the name will not be used when a desire that it should not be is indicated. Let our friends give, as well as ask. Long essays are not desirable; concise, compact notes of personal experience in rural matters, new expedients for facilitating work, better methods of doing things, even in the minor things of country life, are always welcome.

The Cover will be welcomed by our subscribers as a protection to the first page of the paper. This page usually contains a valuable engraving, and as each paper is read by many persons, it is usually badly soiled. The cover not only prevents this, but allows our art department to present a pleasing design, which speaks for itself. The implements and products of agriculture and horticulture are tastefully arranged to form a setting for pictures which will be changed from time to time.

Death in the House.—It is a terrible thing that a large number of happy homes are liable to become at any moment scenes of desolation, that the lamp which lights the faces of the family circle should often be an impending danger. We read of kerosene accidents so often that they cause no feeling of alarm, and are looked upon as a part of the news of the day. Were as many killed in battle as are killed during a year by kerosene, the whole country would be deeply stirred. Let any one read the account of a recent case at Sing-Sing, N. Y., and say if it is not time that this matter was agitated. A father left his wife with three children at home; all that remained on his return was one poor, burned, little thing. The mother and two children were dead. A kerosene lamp had exploded, and that was all. "Do you not approve of kerosene?" Certainly we do, and often use it in preference to gas. There is no trouble with the good article. The explosions and deaths lie at the door of the villains who mix naphtha and the like cheaper and dangerous oils with the proper burning oil. The retailers are not so much to blame, as they are generally ignorant of the nature of the substance with which they deal, but the manufacturers are wickedly criminal, as they do know just what they are making, and exactly how dangerous the material is. We gave in November last the method of distinguishing the safe from the unsafe oils. Congress has passed a law in relation to the matter, but it does not seem to meet the case. Is it not time for the people to move? Or must there be a few more "accidents," which are properly murders. Now that the Legislatures are generally in session is the time for the people to demand a State law. Rhode Island has set the example, and with most beneficial results. Stop this wanton waste of human life.

We Accept the Amendment.—"J. J." writes: "You say in the *Agriculturist*, Dec. 1868—'Sell an acre of land, if necessary, and stock your house with \$10 to \$50 worth of good books.' Would it not have been better to have said, set aside one acre of land; let your sons cultivate it at every odd moment; put on the crop that will leave the land in *best condition*, and bring the *best returns* when sold. Encourage them by word or assistance. Let this crop be sold each year, and invested in all new agricultural works—histories—standard works, not agricultural—and papers, not forgetting that standard agricultural paper, the *Agriculturist*. Would not the pleasure in reading be far more when each book was earned by their own efforts? In how few years a large library would be formed, and the acre can then be devoted to other similar purposes."

Our Show-bill for 1869 is, we think, the most brilliant and attractive of any yet sent out. It is sent free to those making up clubs; they will find it useful, and will have a collection of handsome engravings besides.

The American Agricultural Annual for 1869 is issued the present month. The plan of this volume, following that of former numbers, is to furnish the farmer with a complete *Almanac* and record of the more important Sideral Phenomena, Eclipses, etc., together with a carefully prepared *Calendar of Operations*, or Hints about Work for each month; a variety of information, interesting and important to farmers, as indicated by the following list of articles; and concluding with a *Farmers' Directory*, containing a list of the principal dealers in implements, fertilizers, seeds, horses, cattle, sheep, swine, and poultry. Aside from the matters specified, the Annual contains numerous valuable and convenient practical tables, a Retrospective View of the past year, a record of Progress in Agricultural Education, with a list of Agricultural Colleges, with

the advantages offered students, and a Notice of Agricultural Inventions. There is also an article on Recent Progress in Agricultural Science, by Prof. S. W. Johnson; one upon Hoes and Hand-weeders; one upon Clearing Rocky Land; "A Few Words on Pigs, Breeding and Management," by Joseph Harris; Gas Tur, its Products and Uses, Roofing, Walks, Floors, etc., by H. W. Johns; Veterinary Matters, by Dr. John Busted; Prevalent Diseases of the Cattle of the United States, by Prof. John Gamgee, of London; Trout Culture, by William Clift; Fine Wool Sheep; Agricultural and kindred literature of the past year; together with other articles and minor items. The whole comprises a work of about 152 1/2mo pages, illustrated in the best style, and bound in paper or cloth; price 50 cents or 75 cents, according to style of binding.

Some Too Late.—Several parties whose advertisements we would gladly have inserted sent their favors too late for this number, and similar cases occur almost every month. Please bear in mind that to be sure of publication, advertisements must reach us by the fifth of the preceding month. Our immense edition requires a long time for printing in the careful manner it is done, and mailing, etc., can hardly be accomplished before the end of the month, even when commenced so early.

Our Horticultural Annual.—The American Horticultural Annual for 1869 is now ready. It follows the same general plan as in former years. It is the only work in which an attempt is made to present in a compact form the horticultural progress of the year. Reference is made to all the new fruits, flowers, vegetables, etc., described and figured in the several horticultural journals, each department being made up by one who has made a specialty of his subject. Aside from the *résumé* of the year's doings, we aim to present in each issue several essays on horticultural matters which shall be of permanent value. Of this kind are the excellent article on the Clematis, by Josiah Hoopes; on the Gladiolus, by George Such; and on the Cultivation of Asparagus, by Francis Brill. Besides the gentlemen just mentioned, there will be found among the contributors the eminent names of Warder, Barry, Elliott, Fuller, Henderson, Parsons, Gregory, and others identified with American horticulture. Besides contributions, there is much editorial matter, a concise Calendar of Operations, a list of dealers and nurserymen, the books of the year, etc. The illustrations are of the same superior character as those of former years. The whole forms a useful, beautiful, and remarkably cheap year-book of 152 pages. Price, by mail, 50 cents, in illuminated paper covers; 75 cents, in cloth binding.

Sundry Humbugs.—Please don't send any more letters asking about this or that doctor, who advertises in this or that paper. We have frequently stated that we regard *all* advertising "doctors" as quacks. There may be a difference in them, but we are unable to draw the line; they differ only in degree. Some merely publish a list of their wonderful cures; some warrant to cure or no pay; while others use more striking expedients to attract public attention. There used to be a chap with a stand in the street near our old office, where for a long time he peddled a toothache remedy and such stuff. Lately he has been extensively advertised as "Doctor," and the papers are filled with his doggerels. Lord advertising being his way of gulling people, he carried it to the extent of a procession. A few days ago this passed by our office. First came an omnibus with a brass band; then an open barouche, the four horses of which were decked with ribbons, and within the "Doctor" sat in solitary grandeur. After the Great Mogul's chariot came several other barouches filled with boys carrying banners and placards to advertise the quack's nostrums. This is one style of advertising "doctors" and more rare than another style which may be called the hotel doctor. These birds of prey suddenly arrive at the village or town hotel, issue stunning hand-bills, stating that the celebrated "Doctor" so and so may be consulted for a few days, etc. Forthwith the weak-minded men and women give the fellow their dollars, and the community is well off if the only loss that it sustains is that of money. We recently gave an account in a paper of the doings of two of these chaps in an Eastern State. One of them, calling himself an "Indian Doctor," so ingratiated himself with the daughter of wealthy parents that she married him. The father, anxious for the welfare of the young couple, generously contributed means to start his son-in-law in business. This was just what the "Doctor" wanted, and with the confiding father's money in his pocket, he decamped to parts unknown, leaving his bride worse than a widow. Before leaving the town he boasted of having, during his short stay there, invaded the home circle of no less than eighty families, and destroyed the virtue of as many women. This fiend is still at large, and, no doubt,

planning like operations in other parts. Look out for travelling advertising doctors. . . . A few old offenders in the "gift enterprise business" are evidently trying to sell out. We give them the benefit of a notice, viz: W. J. Wheeler & Co., alias L. S. Todd, alias Hayward & Co., alias C. H. Garland & Co.; Hunt, Anthony & Co., who may be the same as Gains W. Hubbard, Jun.; that old offender Westbrook, and Harper, Wilson & Co., are the most prominent among the operators just now. They offer for sale at greatly reduced prices "large importations of watches, jewelry, &c." Beware of them. Cheap jewelry is dear at any price. The old "ticket dodge," which some still try, is well known by our readers. Unless the "Rural American" can look a little more closely to the character of advertisements admitted to its columns, it had better stop business. Advertising "patent medicines" is had enough, but licentiousness is little less than criminal. . . . "One dollar" stores are on the increase; we repeat, we see no advantage in them. In our November No., p. 370, 1853, we called attention to the "Patent Butter Association." They claim that by dissolving a certain powder in the milk before churning they are able to get a pound of butter from a pint of milk. We mention the subject again to class it with the humbugs. The stuff obtained from churning together one pint of milk, a teaspoonful of this powder, and half a pound of butter, (the added butter said to be essential "to coax the milk") and which they call "butter," is a whitish, odorless, almost tasteless mass of grease and water. That the fresh wet mass will weigh a pound and a half we do not know. To get a pound of solid matter of any sort from a pint of liquid weighing a little over 17 oz., 70 per cent of which is water, is impossible. . . . The Royal Havana Lottery makes an enormous spread just now. There are no less than half a dozen "special agents" for this grand humbug in this city. Some are old and well-known names; a few are new. Of course, our readers will not trust money in any lottery whatever, even if it be a "Royal" one. D. A. Smythe, C. A. Taylor & Co., W. O. Smith & Co., Lloyd, Semmes & Co., are the more prominent "special agents." Any person sending money to these parties subjects his letters to confiscation by the P. O. Department, and must not complain if he loses his money. . . . Mr. D. R. Jun., you will get that "grand piano" "in a horn." We know of no such institution as the "New York City Charity Mission," and no such "grand distribution of premiums" ever came off at Cooper Institute or any where else, except in the fertile brains of H. Clay Horn and his "Rev." friend, J. E. Woolver. Charity missions do not operate in the way this H. Clay Horn would have people suppose.

A Remarkable Little Gun is offered as Premium No. 106. It has shown some excellent performances in the hands of our senior Publisher and his friends, and is worth looking after. A full description with illustrations will be found in the advertising columns in the latter part of the paper. We hope some hundreds or thousands of our readers will be the happy recipients of one of these weapons as a premium.

Report on the Utica Plow Trial.—We have received the report of this famous trial. It is a volume of 288 octavo pages, full of illustrations. It is prefaced by a History of the Plow and several other important chapters. Though, on the whole, a most valuable contribution to agricultural literature, on some points it is criticisable. Lack of space prevents our insertion of an extended notice prepared for this number. It is issued by the New York State Agricultural Society, under whose auspices the trials were made.

Early Rose Potato Premium.—We shall send no more of this premium until April, unless by special request and at the risk of the party ordering, as there is danger from frost. All orders will be received and the potatoes forwarded in the spring.

Massachusetts Agricultural College is located at Amherst, Mass. Previous to 1867, but little had been done except to purchase four hundred acres of land about a mile from the village. Since then, seven large buildings have been erected—a Botanic Museum and Lecture room, a Chemical Laboratory, two Dormitories and Boarding-houses, and the Durfee Plant-house, covering 10,000 square feet, with all the best appliances for growing tropical and other plants of our own climate. There are ninety or more young men who are now in the institution. The average age is eighteen years, and about three-fourths of them are from the farm. Over a third of them have declared their purpose to become farmers, while the rest have not decided upon their calling in life. Six hours of labor each week is the maximum required. Some of the students, whose necessities require it, labor more, and are paid 12½ cents an hour for it. A few who are skilled

in special labors are paid more, and nearly defray their college expenses by their work. Funds are wanted to furnish good stock of all the improved breeds. Ten acres of land have been underdrained and seeded with the best grasses. This is designed for the Botanic garden, and will be planted as it is needed. The Institution is so prosperous that the new Dormitories are filled as fast as they are built, and they are now in as much need of a third Dormitory, as they were of a second a year ago. The faculty are doing their work well, and have the confidence of the students, and of the farmers of the State. Beside the studies appropriate to such an Institution, the classes go through a course of military tactics, and are so thoroughly drilled, that the State will have good soldiers as well as farmers for its future defenders. We congratulate the gentlemen who have labored so long and faithfully for this institution, upon their great success.

Pigs in Russia.—Our correspondent at Moscow is informed that his queries are referred to the editor who is best qualified to answer, and he will reply by letter. Within a few days we have had queries from Japan, New South Wales, and Russia. Africa sends us quite a number of subscribers, and there are but few countries not on our mail books. We shall be obliged to address our correspondents as Webster (we think it was), called an immense mass meeting to order—"Attention, the Universe!—Advance by Nations."

Knox's Seed Store.—If Mr. J. Knox had not acquired so wide a reputation as a successful grower of grapes, strawberries, etc., he would probably have been celebrated as a seedsman. While carrying on his fruit farm, he has been building up the most extensive seed and implement business in Pittsburgh. This branch of his business now passes into the hands of his son, Mr. W. W. Knox, who has heretofore had the chief management of it. Mr. Knox the younger has abundant energy and enterprise to make his establishment the leading one upon the western side of the Alleghenies. He will keep all the novelties in the way of seeds and implements, as well as the standard articles, in large or small quantities.

Post-office Directory.—A new edition, containing a list of all post-offices, etc., useful to all who have much correspondence, is advertised in this paper.

Please Speak of It.—The **Agriculturist in German** contains the same illustrations and mainly the same reading matter as the English edition. It has a large circulation among the German population of the West and elsewhere, and it is made more acceptable to them by having each month contributions from the Hon. F. Muench, one of the most experienced agriculturists in Missouri, in addition to what is given in our English edition. Many who take the English edition find that a copy of the translation for the use of their German workmen is a good investment. This German edition is of great value to the large number of German cultivators living in our country, and especially to those constantly arriving. Will our readers please speak of it to their German friends?

A Few Dollars' worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to *make their heads help their hands*. Any good book will, in the end, be of far more value to a youth than to have an extra acre of land on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres than he would off from 50 acres without the mental ability which reading will give him. Far better to sell the acre of land than do without the books. Several good books are announced in the Advertising columns, and in the list on page 5. The Publishers' premium offers, on the same page, open a way to get books without expense. The farmers of any neighborhood may put their heads together and raise a club of subscribers, receive the books, and hold them for general use by all.

Report of the Commissioner of Agriculture.—General Capron's report of the seventh year's doings of the Department of Agriculture is one calculated to secure for him and his associates the confidence and co-operation of the agriculturists of the whole country. His deprecation of a renewal of the Canadian reciprocity treaty or any thing like it, and his appeal to Congress for means to prosecute further investigations into the diseases threatening or attacking our farm stock, and to publish the report made by Professor Gamgee on the Texas fever, come directly home to our farmers. We are so thoroughly with General Capron in his desire to spread reliable information on the subject of the diseases of farm stock before the public, that we

earnestly appeal to Congress, assuring our Representatives that, so far as we can judge, they can hardly make more useful or more popular appropriations.

Florida Fruits.—"A subscriber" sends us specimens of oranges, lemons, etc., grown at San Augustine, Fla. We do not know "Subscriber's" name, but the fruit was very fine, and we thank him all the same.

Massachusetts Board of Agriculture.—This body met at Amherst the second week in December, and devoted three days to lectures, and discussions on agricultural and horticultural topics. Lectures were delivered by J. F. C. Hyde on "Fruit Culture," by Prof. John Gamgee, by Prof. Louis Agassiz, by Mr. X. A. Willard on Dairy Farming, and by Dr. G. E. Loring on Agricultural Progress. Discussions were held upon "Commercial Fertilizers," "How to Make Farming Profitable," "The Art of Agriculture," "The Hay Crop," and other subjects. There was a large attendance of the Board and of the friends of improved husbandry, from all parts of the State, and some from abroad. Farmers from the neighborhood flocked to the meetings, and the large hall devoted to them was well filled. We have rarely attended a more enthusiastic agricultural meeting. A large class of the farmers of Massachusetts are wide awake to the interests of their calling. The arrangements for the meetings were good, and the hospitalities of the citizens were liberally bestowed. Full reports of these meetings are given, not only in the papers, but in the Annual Report of Secretary Flint. The example of the Board in holding their sessions in the midst of a fine farming district, and thus commanding a full house, is worthy of imitation. These discussions and lectures cannot fail to quicken the minds and improve the farm practice of all who had the privilege of attending them.

The Cornell University.—The opening of this institution occurring just at the time of the numerous fairs, we were unable to be present. We are glad to learn from those capable of judging, that, for so large and new an organization, it is working satisfactorily. The faculty, so far as we know them, are eminently qualified for their work, and the students are said to be a remarkably intelligent and enthusiastic body of young men. Minutely endowed by Mr. Cornell and the State, this University ought to realize all that its founder intends it should, and all that its friends hope.

Insect Extinguisher is the quaint title of a lecture given by Joseph Treat before the people of Vineland, and which he has printed for distribution. It brings together the various modes that are in use for destroying insects. Whether we should be the gainers by the indiscriminate slaughter of useful and injurious insects is a matter upon which all are not agreed.

"Earth Closets; and how to make and use them," is a little 12mo volume, by Col. Geo. E. Waring, Jr., published by the Tribune Association. Very good, very useful, well worth its cost—25 cents—but unsatisfactorily brief. Our own faith in dry earth is increasing month by month. It is a wonderful and inexpensive article, the best disinfectant, deodorizer, and purifier known wherever it can be applied. Col. Waring gives accurate drawings of earth closets, chamber commodes, etc., from which others may be constructed. Sent by mail from the office of the *Agriculturist*.

An Experimental Farm.—Some one writes to us to offer, for a consideration, his farm for experimental purposes to "carry out the views given in the *Agriculturist*, and report the results." We allude to this matter, as there may be others who think our teachings are merely abstract views, which yet need to be verified by practice. We believe there is no paper that "smells of the soil" more distinctly than the *Agriculturist*, while as to farms, there are three managed by different editors of the paper, and instead of our needing a place to carry out the views given in the paper, our "views" are the result of actual experience.

Basket Full and running over, and many items intended for this month are left out until the next.

New York State Poultry Society.—The Poultry breeders and fanciers who met at the last Fair of the New York State Agricultural Society then and there associated themselves under the title above given. The "Annual meeting" has just been held, officers elected, and an exhibition of poultry provided for, which is to take place late in the winter or early in the spring, in New York City. G. H. Warner, New York Mills, Oneida County, N. Y., is President, and Daniel E. Gavit, New York City, is Corres. Secretary.

The European Larch.—At the Kane Co., Ill., Fair, a European Larch tree was exhibited from the Larch forest of D. C. Scofield, Elgin, Ill., of thirty feet in height and twelve inches in diameter at the base or collar, which tree was imported from Scotland eleven years before, a plant the size of a goose quill. This tree was by no means the largest of the thousands growing in the above-mentioned forest, but is a demonstrative evidence of the rapid growth of the larch, which is one of the most valuable of all varieties of timber.

Tree Named.—"C. W. II.," Bacon Hill, N. Y. The leaf is that of the Tulip Tree, also called Whitewood, and in some parts of the West, Poplar. It is one of our most beautiful ornamental trees. The leaf sent is much larger than the usual size, being a foot across, and is probably from a young plant.

The Diseases of the Wine, how to prevent and how to cure them." By J. A. Schmidt, New York. The researches of Pasteur upon the various ailments of wines have attracted much attention abroad. For the benefit of American wine makers these have been embodied by Mr. Schmidt in a small volume of 47 pages, illustrated by numerous engravings of the microscopic characters of diseased wines. A small edition was issued to supply subscribers, and the few remaining copies are offered at \$2 each.

Cancer Nonsense.—Under the head of "Agricultural," the N. Y. Weekly Tribune publishes the following: "*Cancer Cured.*—J. W. James, Deerfield Centre, N. H. 'My wife had a cancer three inches in diameter drawn out by the use of a plaster made of wood sorrel. There is no mistake about it, for we did it ourselves, and several other cases have succeeded in the same way.'" What there is "agricultural" about that we fail to see. We wonder what became of that "cancer" when it was drawn out. Did it crawl off, crab-fashion? What an awful hole it must have left! Why cannot the Tribune confine its quackery to its advertising columns, and not give an editorial endorsement to such stuff.

Moon-Signs.—Unbeliever, Burgettstown, Pa., asks: "Do you believe, as many do, in the 'signs of the moon,' in regard to sowing, planting, etc.?"—Of course we do, in our way. We believe if carrots are sown in the full of the moon, that they must be hoed and weeded very thoroughly in order to get a full crop. If pork killed in the wane of the moon "shrinks in the pot," it is a sure sign that the pig wasn't properly fed. We have known many a crop to fail when the signs of the moon were not observed. There is a great deal in signs—if you don't believe it, ask Barnum.

Pears Do not Bear.—"A. L. B.," Munroe, Mich., wishes to know why young pear trees, which blossom abundantly in spring, bear only four or five years. Merely blossoming, that is, the opening of the flower, is not all that is necessary to produce fruit. The pistil must be fertilized by the pollen, and if a cold, wet spell occurs at the time when the pollen is ready to do its office, fertilization is apt to fail. Then, again, many flowers are incapable of self fertilization, but must receive pollen from another blossom of the same tree, or from one of a different tree. How far this is the case with the pear is not established, but there is no doubt that with this and other fruit trees, bees and other insects materially assist in the important work of fertilization, by carrying pollen from one flower to another.

The Stark Apple.—A. H. Gaston, Henry, Ill., sends us specimens of this apple, which he considers of great value. Mr. G. says if he were to plant 1,000 trees, 700 of them would be of the Stark. The fruit is large, and has every appearance of being a good market variety. While Mr. G. sets forth the good qualities of the fruit at length, he frankly admits that "in point of flavor it is not first-rate, but it is as good as we can expect." We learn from other sources that it is regarded as a reliable and profitable market variety, and our Eastern orchardists would do well to look after it.

Horticultural Journals.—The new year brings some changes among our horticultural contemporaries. Years ago, Hovey's Magazine was the only journal of the kind, and in its earlier days showed more of vigor than latterly. Mr. Hovey has been absorbed in too many other enterprises to give it that attention it needed, and quotations from foreign journals filled a large share of its pages. The Horticulturist appeared some years later, and was most charmingly edited by the late A. J. Downing. It has passed through many hands since. The Gardener's Monthly came next in order, edited by Thomas Meehan, one of the most original

thinkers and careful observers of our day. Last on the list came the American Journal of Horticulture, which does not appear to have been edited at all. We learn by a "Notice Extraordinary!" of a "Grand Horticultural Consolidation." Hovey's Magazine and the American Journal of Horticulture are to expire in each other's arms, to reappear as Tilton's Journal of Horticulture and Floral Magazine, which is a very sensible thing to do. There ought to be talent enough at and around the "Hub" to give us something better in the way of a journal than we have yet had from there. The Horticulturist changes hands. Mr. Woodward has probably found that he could not attend to his profession and manage a journal too, and has disposed of the Horticulturist to H. T. Williams, who will, no doubt, infuse fresh life into it. We wish these new enterprises much success, which they can only attain by giving the horticultural public better journals than either Hovey's, the Horticulturist, or the American Journal of Horticulture has been of late. As to the Gardener's Monthly, we hope it will continue to be as good as it has been.

Putnam on Illustrations.—Putnam's Magazine for October has an appreciative notice of Hoopes' Book of Evergreens, in which it speaks of the illustrations as "exceptionally good," and supposes that they must be the work of Mr. Isaac Sprague, an artist who lives near Boston. It says: "If they prove to be by another than Mr. Sprague, we shall then be gratified with the information that we have two first-rate botanical draughtsmen, when we thought ourselves happy in only one." We think it a high compliment to the illustrations to have them taken for Mr. Sprague's work, but the reviewer has much to learn about draughtsmen and engravers. The illustrations which he thinks are so good that the name of draughtsman and engraver should be published, were drawn by four different artists, and engraved by six different engravers. All the work was done in our own establishment. Boston is a clever place but it does not contain all the talent in that line.

Pine Leaves.—These, called "pine straw" and "pine needles," are used at the South as a mulch and for bedding animals. Who can tell about their value as a manure, and how to make them available?

Cut Cions Early, for when properly kept through the winter they are more likely to succeed in spring than those cut just before the time to set them. Vigorous shoots, which are the best for cions, often do not become so thoroughly ripened that their vitality is not more or less impaired by long-continued cold weather. Small quantities of cions are best kept in sawdust. J. J. Thomas gives a very good method of preserving large quantities. They are placed in a box, which should be about two-thirds filled; slats are then nailed across the box on the inside, to hold the cions down when it is inverted. The box is then buried upside down below the reach of frost in a place where water will not stand.

Sheep and Plantain.—"Contributor," Franklin, Tenn., writes in reference to an item in the October *Agriculturist*: "If your northern Plantain is anything like our narrow-leaved Tennessee Plantain, and if your sheep have the same preferences as our Southern sheep, your correspondent will find that a small flock of sheep will do more in one day in eradicating the pest than a dozen hand weeders could do in a week. With us it is the favorite food of the sheep, and as they crop very close, two years of occasional grazing will get rid of it effectually. Indeed, in our State, where our meadows and lawns are infested with numberless varieties of weeds, we find that sheep and goats are worth their keep for no other purpose than as scavengers. Aside from their value as mutton and the product of their wool, we can well afford to feed a large flock for two months in the winter, (which is all that is ever required in our climate,) in order to have their services as scavengers. There is no weed or 'noxious plant' grown in our latitude which the sheep and goat will not eradicate, except the 'wild sage,' and the 'old field broom sedge.'"—The trouble complained of was the Broad-leaved Plantain, *Plantago major*; the one to which "Contributor" refers is the Rib-wort Plantain, or Rib-grass, *Plantago lanceolata*, which has been cultivated in Europe as pasturage. We quite agree with him as to the utility of sheep, but their services are not always available in ornamental grounds.

The Scuppernon Grape; its History and mode of cultivation, with a short treatise on the manufacture of wine from it. By J. Van Baren, of Clarks-ville, Ga. The above is the title of a neat pamphlet of 52 pages devoted to the Scuppernon, which was described in our pages in Nov. last. Of course it can be of use only to our Southern readers, and such will find full

directions for the planting, treatment, etc., of this peculiarly Southern grape, and have some political reflections of the author besides. Price of the work not given.

Tree Peddlers.—"T. M.," Goshen, N. Y., writes: "It would be an excellent plan if you would call the attention of your readers to the importance of not patronizing the men who are going about canvassing for fruit trees. I have bought several times, and the trees are now beginning to bear, but out of fifty different varieties that I purchased, not one is true to name. In fact, they are all of one kind of apple, small and sour. I hear this complaint all over this section. It is necessary that we who want trees should go to some reliable nurseryman, and state to him what we want. One of my neighbors bought 300 apple trees and 150 pear trees; they were to be of the best varieties of fruit, and the apples turned out to be crab apples, and the pears at present it is hard to name for there is scarcely any taste to the fruit, and it is very small. You can do a great amount of good by writing an article, and urging upon your readers the importance of avoiding such scams as these tree agents are." If friend "T. M." had read the *Agriculturist* for many years he would have seen frequent warnings against tree peddlers, and the advice to order directly of the nurseries. As a class, the tree peddlers are a bad lot. They get orders and fill them with what they can pick up. In condemning all who travel and solicit orders for trees, some very worthy people will be included. Some of the best nurseries have travelling agents, who will fill orders faithfully; but these are not of the class to which our correspondent alludes. It is always the safest to order direct, and never safe to order of a stranger unless he can give satisfactory proof that he is a duly authorized agent of some nursery of good reputation.

Price of Farming Lands.—"J. K. S.," "I notice that farms are sold in the Carolinas for five dollars an acre, and in Lancaster County, Pa., for two hundred and upwards. What makes the difference, and how can we make the cheap lands in this vicinity worth two hundred?"—Lands are worth, for cultivation, any sum that they will pay the interest on. The Carolina lands do not now pay the interest on five dollars, and the Lancaster County farms do pay the interest on \$200 per acre. The difference is not altogether owing to quality of soil. Good neighborhood, security for property, healthful climate, facility for getting manures and for marketing farm products, all affect the price of land. In the South, land is plenty, and the workers with capital few. In Pennsylvania, the workers are many, and they all want land. Of course, the price goes up. Bring in more workers who have capital, and improve your cultivation, and the price of land will increase. A very interesting problem for the farmer to solve is—how to make an acre of average land pay the interest on \$200.

Field Peas.—"A Subscriber" inquires for "the name of the field peas raised in Canada for fattening hogs."—The varieties for field culture are not so numerous as those grown in gardens. We presume you can get them of any wholesale seedsmen by ordering Canada field peas. The principal sorts are the gray and the white, and the best kinds for splitting are the "Pearl" and the "Suffolk."

Pumpkin Seeds.—"J. R. S.," of Perryville, Pa., wishes to know if pumpkin seeds are good for beef cattle. What effects might be expected from an exclusive diet of these seeds we do not know, but fed with the pumpkins they would certainly do little harm. The seeds of pumpkins and similar plants, when eaten, produce an increased secretion of urine, and check the secretion of milk in cows, and it may also be better not to feed the seeds to fattening animals for the same reason.

White Labor at the South.—"N. D.," Shelburne, Vt.—"I have been thinking of purchasing a farm in the Carolinas. Can you tell me if a white man can endure labor in that climate?"—Many parts of the Carolinas are as favorable to the health of white men as the North. The river bottoms and rice swamps are unhealthy, even for negroes. On the uplands, in cleared districts, the Northern man endures the sun very well. A Southern planter, forced to work by the exigencies of the times, says: "I worked hard, took the weather as it came, plowed, and hoed corn and cotton beneath the hot suns of June and July, pulled fodder, and yet my health has been unusually good, better than for many years that were passed in sedentary occupations. Many persons told me I could not stand the hot suns. I have stood them very well, and I believe a great many others could do the same, if they had the will." Many more white men are killed in the South, as well as elsewhere, by their vices than by the climate. Germans and Irishmen are found as laborers in all the Gulf States, doing quite well.

Hen Guano.—"E. C. L.," Williamsville, (where?), gives the following method of preparing and using hen manure: "During the fall and winter, every few days, a few shovelfuls of dry manure were spread over the droppings beneath the roosts, which were made with floors for the purpose. It had the effect of keeping the house sweet and odorless. In the spring I had a good pile of home-made guano. By shovelling it over several times it was finely pulverized, and no more unpleasant to handle than dry earth. I used it upon a late piece of corn, dropping a handful in each hill. It soon caught up with corn planted ten days earlier, ripened full as early, and yielded better. It seemed to grow so fast that the outworm could make no impression upon it."—The manure of fowls is the most valuable made upon the farm, and the example of our correspondent is worthy of general imitation. If the fowls are left to roost upon the trees, or on the carts and wagons, this valuable fertilizer is wasted. Nothing pays better than a good roosting place. Five minutes spent every day in it, with muck, shovel and broom, will be repaid in several dollars' worth of excellent manure at the close of the winter.

How to Use Sea-weeds.—"L. P.," Westport, Ct., writes: "I have a beach within a mile of my barn-yard. Will it pay to cart sea-weed that distance, and what is the best method of making manure from it?"—There are several varieties of these weeds thrown upon our shores, some much more valuable for manure than others. The rock-weed, kelp, and others, which are algae or sea-weeds proper, are much more highly esteemed than the cel-grass, which is not a true sea-weed, though this is very largely used. Farmers not infrequently cart them five or six miles back from the shore, and find it to pay, especially if taken as return loads. A man who has access to a beach where this material comes ashore in unlimited quantities can make his farm as rich as he pleases. It is good carted into the yards and sties as an absorbent. The dried cel-grass makes very good bedding for cattle. The other varieties are used to a considerable extent for top-dressing meadows, and with excellent results, and are worth about as much as yard manure. They are, besides, much used in making compost heaps, with surface soil, or peat. The winter is a very favorable time for gathering sea-weeds, as the heavy storms always tear up large quantities, and wash them ashore. The heaps need watching, as thousands of loads are frequently within reach to-day, and are gone to-morrow. This marine vegetation is especially valuable for potatoes and turnips.

Carrots for Horses.—"L. D.," Boston Corners. "I see these roots often recommended for horses. How should they be fed?"—They are one of the best kinds of feed for horses, and should be fed about two to four quarts a day, in connection with other feed; more will do no harm, as hay, oats, or corn meal. Wash the roots, and run them through a root cutter, or in the absence of a machine, slice or mash them in some other way.

Feeding Mangel Wurzel.—"M. O.," Orange County.—"I fed this article to milk cows last winter, and it caused the scours. Is there any way to avoid this?"—These roots undergo a curing process after they are stored, and we have found it best to use them in the latter part of winter and spring. If they loosen the bowels, feed in smaller quantities. They should always be used in connection with some dry food.

Buckwheat for Milk Cows.—"M. W. P.," Canada. "What do you think of buckwheat for cows, and would you feed it dry, or wet it up with cut hay or straw?"—Buckwheat is excellent provender for all cattle and swine. It is more commonly ground up with corn and oats, and the meal fed in connection with cut hay or straw.

Value of Straw for Feed.—"F. W.," "What is the relative value of the straw of the several kinds of grain?"—Rye is generally considered of the least value for feed, but best for bedding. If cut a little green, all the different kinds of straw have nourishment, and are advantageously used, together with meal.

Scrap-Cake.—"A. G. F.," Milton, Pa. "Can you tell the price of scrap-cake, which is recommended as a good feed for hens in winter?"—Pork-scrap can be had at the agricultural warehouses at about 3½ cents a pound, in small quantities; of the packers and tallow chandlers, at 2½ to 3 cents per pound, in large quantities. Beef-scrap is about ½ cent per pound less.

Poultry Items.—How to Make Hens Lay.—"S. R. W.," asks for the best way of making hens lay that wish to set. Our way is to confine

them in a light coop in the yard among other fowls; give water, but very little food, for three days or more, as may be necessary, and after this feed abundantly, giving pork-scraps or other rich food with grain.

How Many Chicks for One Hen.—In winter, set nine eggs; in spring, thirteen; in summer, fifteen, under the same hoo. She will give, if well cooped, two-thirds the number, with good protection, and after the first of June, if the coops are brought under a dry shed during cold storms, the chicks of most varieties of fowls will not suffer if a hen hatches as many eggs as she can cover.

Stray Grains for Chickens.—Under this title the Gardener's Magazine (English), gives the following sensible hints: "Feed your poultry on raw onions chopped fine, mixed with other food, about twice a week. It is better than a dozen cures for chicken cholera. Fowls exposed to dampness are apt to be troubled with catarrh, which will run to roup, if not attended to. Red pepper mixed with soft feed, fed several times a week, will remove the cold. Pulverized charcoal, given occasionally, is a preventive of putrid affections, to which fowls are very subject. Setting-hens can be cured by putting water in a vessel to the depth of one inch, putting the hen into it, and covering the top of the vessel for about twenty-four hours. The vessel should be deep enough to allow the fowl to stand up. This is the best remedy I have ever tried. Pulverized chalk administered with soft feed will cure diarrhoea. This disorder is caused by want of variety in the food, or by too much green food. Garlic feed once or twice a week is excellent for colds."

Raising Poultry for Market.—"E. F. V.," Arch St., asks: "Where can I find some one who is engaged in raising poultry for the market? I intend going into the business."—Poultry raising is a branch of business usually followed on the farm, and you can hardly go amiss of good poultry men in any farming district. It is seldom pursued as a distinct business, and when attempted has generally failed, mainly, we think, through too close crowding. A thousand hens, turkeys, ducks, and geese, ought to have at least twenty acres of land, partly covered with wood and brush. Ducks, geese, and turkeys, are very extensively raised about Narragansett Bay, in R. I., and it would pay a man who wishes to raise water fowl to visit Tiverton and Little Compton, in that State, to learn how it is done.

Mixed Stock in Pastures.—"E. D. S.," Putnam Co. "Is it a good plan to keep different kinds of stock in the same pasture?"—John Johnston says: "Sheep do well among cattle, but cattle do badly among sheep." Unless pastures are very large, and the feed very abundant, it is better to keep them separate. Sheep gnaw the grass very closely, and their fresh droppings are so offensive to cattle that they will not feed near them. Besides, sheep are very liable to get injured by horned cattle. If the high grounds at a distance from the house are selected for the sheep, they will keep the pasture constantly improving without other manure. The pastures nearer the barn are much more convenient for the cows. Sheep and horses do better together. Both are close feeders, and there is much less danger of the sheep getting harm. It is well to have a rotation of stock as well as of crops. The pastures fed one season by cattle may, with advantage, be fed the next by sheep.

How to Start a Farmers' Club.—"G. L. C.," Dennis, Mass.—"Can you tell us how to start and manage a Farmers' Club?"—This is one of the things that ought to go of itself in any farming community. Call a meeting without delay. It is not necessary to have a constitution or any officers but a chairman, who may be provided for in alphabetical order of the names. Propose a subject, invite in the neighbors, and let each man have his five or ten minutes' talk upon it. It will be found very profitable to compare notes. If men from other callings will come in and give their outside views of farming operations, it will be all the better.

Small vs. Large Farms.—"R. D.," Hackettstown, N. J., asks: "What is your objection to farming on a large scale, say 400 to 500 acres?"—None whatever, if the man has capital, and skill enough to work that number of acres thoroughly. The probabilities are that the man who has much land will not spend money enough upon it to make it pay as well as the small farmer would. There are some advantages in the large farm. It requires less capital per acre for buildings, stock, tools, and oversight. The system of small farms is probably the best for society. It brings families closer together, distributes wealth more equally, and favors social intercourse. With farms occupying a mile square, public schools are almost impracticable, and it is difficult to sustain churches, lyceums, and libraries. The highest state of social cultivation does not harmonize with the plantation system, or with enormously large farms.

A Small Farm in California.—In a recent conversation with a farmer from California, he spoke of his 1,200 acres as a small farm, and his 200 acres of wheat as a small affair. Some of his neighbors had 5,000 acres of wheat, and the yield was from 20 to 40 bushels to the acre. The highest yield he had known was 83 bushels to the acre. The fencing of land was getting so common that cattle could not be kept as profitably as formerly, and he had come East to invest in Cotswold sheep. To an Eastern man, the terms small and great have a very indefinite application in that country.

Potato Balls.—"W. H. S.," Wilmington, Mo. Potatoes from the balls or seed proper may or may not be better than the potato producing the balls. The seeds are washed out of the balls and saved just like tomato and similar seed, and carefully sown in good soil in the spring. It takes several years' cultivation of the product to ascertain whether the seedling is valuable or not. The process is resorted to only by those who wish to experiment in raising new varieties.

Asphalt or Concrete Flooring.—The Gardener's Magazine, (English, Shirley Hibbert's), has the following: "Three parts coal-ashes (those from the blacksmith's forge to be preferred) and two parts gas-lime from gas-works, to be thoroughly mixed, and then made into a mortar with gas-tar. If the gas-tar come from gas-works where the ammoniacal liquor is not separated, it will be sufficiently mixed for the purpose; but if the latter be separated, and the tar be thick, it will set quicker if about one-fourth part of water be mixed thoroughly with the tar when used. For the floors of cow-sheds, this should be laid about three inches thick in one layer, on an even surface of gravel, or stone broken very small with a sprinkling of gravel over, and rolled down. The mortar may be laid on with a common shovel, and merely patted down flat. In dry, warm weather, if the mortar has been carefully made, the floor will set firm in a few days. For any ordinary outhouse, half the thickness will make a permanent floor."

How to Make Rails Durable.—Almost every one notices a difference in the rails used for fencing material. Timber left with the bark on rots very much quicker than that which is split and seasoned. Some rails last but three or four years, and others are good for fifteen or twenty. There is a difference, of course, in the woods used for this purpose. Birch poles are sometimes worthless after a year's use, and chestnut is very durable. Experiments show that rails cut and split soon after midsummer last much longer than those prepared in winter. But summer is usually fully occupied with tillage and harvest, and of necessity fencing material must be prepared at a time of more leisure. If cut early in the winter, (and none should be cut late) have the logs split immediately, and the rails piled where the sun and wind can have free access to them. It is a good plan to draw them to where they are to be used, as the ground is now frozen. Peel poles too small for splitting.

Cutting Hoop Poles.—"T. R. M.," Hopkinton, R. I.—"I have a large tract of thrifty woods, principally oak and hickory, and wish to know if it will be damaged by thinning, and if there is any market for hoop poles."—A large part of the young trees that start in a piece of cleared land die, and only the fittest survive. If a portion are cut for poles, the remainder will grow more rapidly, and the timber will be of better quality. The poles are in demand in all our large cities for hooping casks, strapping boxes, and similar uses, and they will sometimes sell for enough to pay for an acre of land.

Compressing the Soil.

All facts in regard to soils should be familiar to the farmer, even if they have no apparent bearing on practical agriculture. We may not fully understand why a soil that has been stirred will settle into a smaller space than it occupied before it was moved, but such seems to be a fact. The soil thrown from an under-drain, when put back, will form a slight ridge on top, but in the course of a year or so will settle down enough to form quite a hollow. In other words, stirring the soil at first expands it, but afterwards compresses it. In engineering, this *shrinkage*, as it is called, which is the result of excavating, transporting, and compacting in embankments, is allowed for. Mr. Elwood Morris, C. E., in experiments on a large scale, found this shrinkage of light sandy earth to be 1/8 of its volume in excavation; of yellow

clayey earth $\frac{1}{10}$; and of gravelly earth $\frac{1}{12}$, (Gillespie on Road Making, page 119). In other words, sandy soils are compressed more than clayey soils by working. It is often very desirable to compress sandy soils so as to give a firmer foothold for the plants, especially of wheat. An English turnip fallow, which makes the land as mellow and loose as an ash heap, when the turnips are afterwards fed off on the land by sheep, converts a "blowing sand" into firm, fertile land. But our object at present is merely to call attention to the shrinkage of soils by working them, and to the fact that clayey soils are compressed less than sandy soils. Our readers can draw their own conclusions.

Deep Plowing Should be Done Gradually.

A correspondent, who has one of the finest and most productive farms in Western New York, which he keeps in a high state of fertility by thorough cultivation and the growth of red clover, makes the following sensible remarks in regard to deep plowing: "A sudden bringing up to the surface of many inches of heavy clay, that has never been punctured by the roots of plants, and this too in the spring of the year, would probably injure the first crop. Clay subsoils are best brought to the surface two or three inches at a time, and that in the fall, so that the frosts of winter may mellow them down. The next spring plow, say twice as many inches deep as the clay subsoil is thick. This will mix things up so that even a crop of corn would be much improved by the deep fall plowing. If we had the power and tools necessary to go on with this process of bringing up the subsoil to, and mixing it with, the surface soil, until we had one foot or more of mellow soil that had been enriched by turning under repeated clover crops, and then under this foot or more of soil, we could run a subsoil plow two feet deep, and so break the clay to a depth of three feet, the clover roots would have a chance to bring to the surface the fertility that now lies dormant under the surface of our lands. This is the theory that I have constructed on the experience of a lifetime as a farmer; and I have no doubt of its applicability on our lands here. I do not think it would do on all lands, but it is practicable here, or at least will be when we get the Steam Plow that can do the subsoiling for us. In the meantime we are doing the best we can in the direction I have indicated."

The Clover and Lime Theory in Practice.

We have had much to say upon the benefits of using lime and clover upon worn-out soils, to give them a start. And yet we are apprehensive that many of our readers have regarded the matter as mainly theoretical, and will not be induced to try it. Although agriculture is admitted to be a tentative art, some things are settled as well as they ever can be by any amount of experiment. Among them is the utility of applying lime to soils that have not already enough of it, and cropping with clover to add vegetable matter and ammonia to thin, light soils, or those that do not give remunerative crops. In a recent trip over the line of the New Jersey Central Railroad, we saw abundant evidence of the renovation of worn-out farms. Thirty years ago these farms were unproductive, and many of their owners were anxious to sell out at thirty dollars an acre and emigrate. It was difficult to sell at any price. Now one will have to go far to find a more

beautiful farming region than stretches from Plainfield, N. J., to Easton, Pa. Farms are worth from \$125 to \$200 per acre, and are constantly increasing in value. It is true some of this rise is due to the railroad, which affords better facilities for marketing, but the most of it is owing to the better management of the land. They make more of clover than in the regular Pennsylvania rotation, as it comes in oftener. The rotation is: 1, corn upon a clover sod, limed; 2, oats; 3, wheat, with the manure of the farm; 4, clover, to be cut or pastured. The farmers in all this region attribute the great change in the value of their lands to this rotation. The crops are luxuriant, and the wheat fields as promising as in any part of the West. In all the better farming districts of Pennsylvania, similar results are manifest. Clover and lime, in connection with the manure made upon the place, keep the farms in good heart, and constantly improving. The average production of wheat and of corn in these districts is much higher than in the Western States, which had a richer virgin soil. Wherever this treatment of the soil has been introduced, it secures the most satisfactory results. We do not see how this management of the soil can be considered as pertaining merely to the theory of agriculture. Yet the mass of our farmers in the Eastern States continue to raise clover in small patches, as a forage crop, without reference to its value as a renovator of the soil. If they would travel more and see what is accomplished in the line of their art, they would form better views, both of the theory and practice of agriculture.

(For the American Agriculturist.)

The Diseases of Animals

BY PROFESSOR JOHN GAMGEE, OF LONDON, ENGLAND.

A movement is on foot, both in the Old World and the New, which promises great and beneficial results. A century since and more, the French inaugurated a system of supervision in relation to the manifestation of fatal cattle diseases, which led to the foundation of veterinary colleges. The steppe murrain, or rinderpest, which mowed down the herds at every movement of contending armies or enterprising stock drovers, stirred up the energies of the Germans, from the Russian frontier to the Rhine provinces, and even the Italians at a somewhat later date picked out four intelligent lads to be educated in the Veterinary College of Alfort, in order afterwards to diffuse the knowledge they acquired amongst the people of their native land. England had been engaged in numerous continental wars, and the flood of people crossing the German Ocean and British Channel attached at various times fatal links between the infected herds of Central Europe and those of the British farmer. Early last century England suffered severely, and continued to suffer, more or less, at intervals, until by the advice of intelligent physicians, amongst whom may be numbered Cullen, the importation of foreign cattle was strictly prohibited.

Thus freed from contagious cattle disease, the breeds of England improved, and how much this immunity from fatal maladies has tended to the development of that excellence for which British stock is proverbial is a question which has never been discussed. I, for one, believe that the protection offered to British herds by strict isolation from the plague-stricken animals of Eastern Europe was for three-quarters of a century one of the silent but most active agencies favoring the development of our match-

less bovine breeds. Since the introduction of pleuro-pneumonia and the foot and mouth disease we have in many points gone back, and our town dairymen fail to obtain in large quantities the excellent half-bred Short-horn cows which filled their milk-pails to repletion. They have had to import Dutch cattle, and with these much disease. The rinderpest in 1865-'66-'67 effectually accomplished the reduction of our breeding stock, but at the same time the restrictions on trade which had to be enforced cleared off the other contagious diseases. Had the Liberal party in the House of Commons not been misled by its leaders, who construed preventive measures into measures for the rich to the detriment of the poor, cattle-disease legislation would have prospered, and another term of peace and prosperity would have ruled the destinies of our enterprising breeders. As it is, little is being done for the protection of British herds, beyond the discussions and resolutions at Farmers' Clubs and Chambers of Agriculture. The lessons learned, however, cannot be forgotten, and at a recent meeting in Edinburgh of the first active and important Chamber of this description, it was proposed that a Consolidated Cattle Diseases, Traffic, and Transit Act of Parliament would, by providing increased security and protection from disease, and thereby decreasing the cost of producing meat, be of the greatest advantage, not only to the agricultural interest, but to the whole community; and further, that the recent ravages of cattle plague prove the necessity for a comprehensive measure, whilst the experience gained indicates the most effective means for the extermination and prevention of contagious diseases.

We need not enter further into the details of the Scottish recommendations, beyond remarking that it is proposed to legislate for contagious diseases only, which comprise both the fatal and non-fatal. Considering that America has repeatedly imported the lung disease from England and Holland, all that is done there for the prevention of cattle disease interests the people of the New World. But, strange to say, an indigenous disease, one springing, in physicians' language, as an endemic or local disease, from the rank pastures of the Gulf States, has stirred the cattle breeders of the whole continent. A meeting of the American Convention of Cattle Commissioners has just been held at Springfield, Ill. We congratulate all engaged in that important *réunion* on the earnestness and business-like skill brought to bear on the subjects discussed. The Black Water or Fever of Texas has been an excuse, and a good one, for attempting more than checking the movement of Southern steers in the summer. Specific recommendations are made in this respect, but State authorities are no longer to overlook the ravages by fatal diseases of any kind affecting the lower animals, and Congress is to be memorialized with a view to the obtaining of reliable and exhaustive reports concerning what almost deserves the appellation of the Cattle Plague of America. There is one point which the Springfield convention should not have overlooked. That is the establishment of veterinary colleges. The States or the general Government must take this matter in hand, for without pecuniary aid such efforts as those to which Dr. John Busted, of New York, has devoted his life and means must prove abortive. Veterinary colleges are needed, and the example of France and Prussia, of Austria, and even Russia, must be followed, or this country will experience the lamentable disasters which have crippled and ruined many a farmer and stock breeder in the Old Country.

In the Lumber Regions.

The great and increasing demand for lumber each year sends the lumbermen further into the

will allow of only a brief outline of the operations. The land is first explored, or "prospected," as the miners say. Good timber must be not only abundant, but accessible, and

which consists of a large log house for the men and hovels for the cattle. These logging camps are more or less carefully prepared, and our artist has shown one of the better sort. As we



Fig. 1.—THE LOGGERS' CAMP.



Fig. 2.—FELLING AND SAWING.

wilderness, and whoever would visit a logging camp, and enjoy the hospitality and novel life of its inmates, must now go a long distance from the sea-board. One of our artists, who passed a

sufficiently near a stream to allow of its being taken out after it has been cut. Many a noble pine yet standing owes its existence to the fact that it is located where its fallen trunk could

have seen them, the door and a hole in the roof were the only openings, that in the roof serving to let in light, and for the exit of smoke. Within, the camp fire occupies the center of the

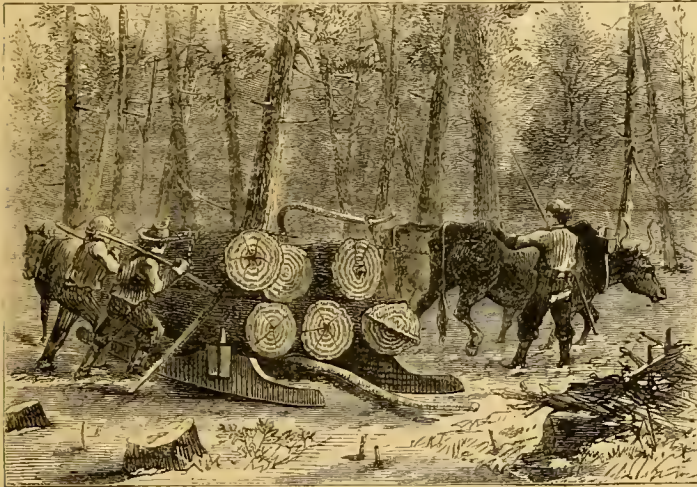


Fig. 3.—LOADING THE SLED.



Fig. 4.—ON THE DRIVE.

portion of last winter in the picturesque portions of Northern Maine, has furnished us with several spirited sketches taken in the lumber region, which are here given. Lumbering is an

not be readily moved to the banks of a stream. The scene of operations being fixed upon, an advance party start for the place in October with supplies to last them for a short time.

building, and on each side are beds made of hemlock boughs, with the feet towards the fire. If the party is to be a large one, rude bunks are made, one above another. The advance party



Fig. 5.—A JAM.

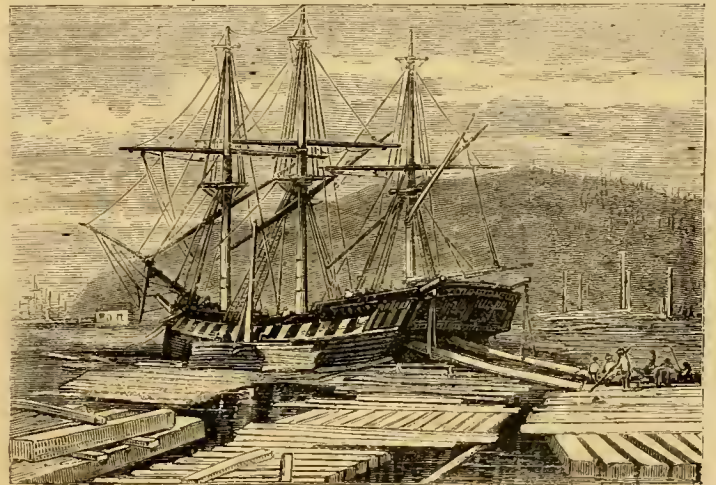


Fig. 6.—THE LUMBER SHIP.

occupation which requires capital and organized labor; and while the general features are everywhere the same, its details are modified by the laws and customs of different States. Space

They make the journey sometimes by boat, but often on foot after they get beyond the reach of roads, packing their provisions and "traps" upon their backs. This party prepare a camp,

also make roads on which to haul the timber to the river, by cutting down undergrowth, bridging over swampy places with logs, and in other ways constructing such roads that a

covering of snow will make them easily passable for the teams. When frost and snow render it practicable, the main party come with ox-teams and abundant supplies for man and beast, and work commences in earnest. The crews consist of twenty or thirty men, who have their assigned duties, and a cook. A skilled chopper will fell a tree with an ease and neatness that are wonderful to witness. No hunter is more fastidious about the points of a rifle than the chopper about those of his axe. The felled trunks are deprived of their limbs and bark, sawed into proper lengths, marked with the owner's brand, and are hauled upon sleds to the banks of the stream, and placed where they can be readily launched. With the breaking up of the ice in the streams, the work of the choppers ends, and a portion of the party return home with the teams, while others remain to "drive" the logs. Driving is the most exciting and hazardous, as well as the most laborious, portion of the work. The logs, committed to the swollen stream, go down with a rush, and it is the business of the drivers to follow them in a boat, and to be at hand to help them out of all difficulties. What with getting off those which run aground, and extricating those which become "jammed," the driver has a lively time. Sometimes on the slippery logs, sometimes in the ice-cold water, and with but little rest, it is a task that can be performed only by the most robust. Where the stream suddenly narrows, a "jam" of the accumulated logs frequently takes place, and to break it up is often a very risky matter, as the starting of a single log may allow the whole mass to move, to the sure destruction of the drivers. Sometimes where the jam takes place between the high banks of a stream, the men who are at work upon it have ropes attached to them by which they can be drawn out of harm's way as soon as the logs start. The writer once saw upon one of the branches of the Penobscot a jam so firmly fixed that it resisted the attempts to blow it up by powder. In driving, the logs of various parties become mixed, and they are only separated when they arrive at the end of the drive, which is at the boom. The boom is made of trunks of trees chained together end to end. These stretch across the river, or from one massive pier to another. All the logs are caught by the boom, and those of each owner, as indicated by the marks, are collected together. In Maine this is done by State officers, who receive a compensation regulated by law. From the boom to the saw-mill is the next step. Here the logs are converted into lumber, which, by various modes of conveyance, reaches the points at which it is consumed. As the great lumbering rivers of Maine flow directly to the sea, most of the lumber is rafted down to tide-water, and placed on slipboard. The engravings show the various steps here described, and need no other explanation than those given.

CARD THE COWS.—One would think that any kind-hearted man, when he sees how grateful this operation is to a cow, would be willing to spend a few moments daily in carding her. It pays as well to clean a cow as a horse. All who have fairly tried it find great benefit from the operation. And yet not one farmer in a hundred makes it a practice to use the card or curry-comb in the cow-stable. We know stupid men who laugh at the idea as a mere notion of some fancy farmer. But, in point of fact, no cow can give the best results at the pail unless this matter is attended to, especially in winter.

Walks and Talks on the Farm—No. 61.

We have had very disagreeable weather for finishing up fall work. Much time was lost, and labor was very scarce and high. In this neighborhood one farmer paid men \$1.75 per day for digging potatoes, women \$1.50, and boys \$1. Potatoes have brought a high price, but such wages take off the profits, especially with a poor crop. There are many fields this year that produced not more than 75 bushels per acre, and 15 bushels of these were too small to sell. Now it costs nearly as much to dig such a crop as one which yields 175 bushels per acre. In point of fact, it costs *more*, for this reason: the good crop is clean and the land mellow; the poor crop is full of weeds, and it takes about as much labor to dig the weeds as to dig the potatoes. I have made up my mind never again to plant an acre of potatoes, unless there is a reasonable prospect of getting a good crop. It is impossible to pay such high wages unless we raise large crops. This is the great truth which we should fully understand and realize. There is no other way of making money by farming. Theoretically we all acknowledge this truth, but it is not so inwrought in our convictions as to enable us to withstand all temptations to plant on land not in good condition. If farmers would raise as much as they now do on *half the land*—in other words, double their crops per acre—they would quadruple their profits. There would be no more to sell than now, and consequently no danger of glutting the markets and bringing down prices below the cost of production. We should spend far less for labor; should need fewer horses; there would be less wear and tear of implements; blacksmith and wheelwright bills would not count up so frightfully as they now do; we should not have to toil and toil from morning to night in getting in our scanty crops; we should have just as much produce to sell, and could keep double the amount of stock; and our farms would become cleaner, richer, and more productive, year after year, instead of becoming poorer and more weedy.

Were I about to hire out to a farmer, I would look for one who raises large crops. Such a man would pay cheerfully and promptly; but a farmer who has to pay high wages for getting in a poor crop could hardly fail to be as cross as a bear. I often think of this matter in connection with the *American Agriculturist*. The expenses for editing, engraving, etc., would frighten the publisher of any ordinary journal.

High salaries are paid, and paid with such cheerful promptness that it is a pleasure to work for its liberal-minded proprietors. The secret of the whole matter is: *they raise enormous crops*. If I raised three hundred bushels of potatoes per acre, I could pay two dollars a day for digging them more cheerfully than I now pay twelve shillings. It would not cost me over two or three cents a bushel to dig them, and now it costs me ten cents or a shilling. And though the *Agriculturist* pays me twice as much as any one else could afford to pay for the work done, yet it amounts to but a very little for each subscriber.

Yes, I do want a new barn. I had a big crop of hay and was obliged to put more than half of it in stacks, and during this wet weather it gives me dyspepsia to look at them. Some farmers have more capital than faith; I have more faith than capital. I have faith in good farming, faith in good stock, and faith in substantial, but not expensive, barns. But those of

us who are short of capital must get along the best way we can. It will not do to fold our hands and bemoan our lot. Energy will overcome great difficulties, and little troubles disappear when looked full in the face by an earnest man. I have two farming friends who are equally short of capital, and yet one gets along very well, and the other is running behind. His fences are all out of repair, the barn leaks, the doors are off the hinges, implements are scattered around, and the stock are allowed to run in the fields all winter, and eat at the straw stack, without as much as a board fence to shelter the shivering and half-starved animals from the pitiless storm. The other keeps things snug and in repair, and, not having money to build a barn for his cattle, he has constructed a shed with rough boards and covered it with corn-stalks, and his cattle and sheep, being regularly fed and carefully attended to, look as comfortable and thrive as well as some that are kept in an expensive barn. It is downright cruelty to let our animals be exposed to the wind in winter. There is none of us so poor that he cannot put up something that shall afford a shelter from the wind, if not from rain.

Prof. Miles, of the Michigan Agricultural College, has sent me a pair of wild turkeys. The eggs were found in the woods this spring, and hatched under a hen. There were no domestic turkeys within miles, and they are undoubtedly genuine. The most striking difference between them and the domestic turkey is in the length and fineness of their legs. They look exactly like those figured in the *American Agriculturist* for October, except that they have not yet got a tuft of hair on the breast. It is curious that, while the object of breeders is to reduce the weight of bones, these wild turkeys should have finer bones than the domestic turkey. The latter arrives at maturity earlier than the wild turkey, but with this exception, it would seem that very little improvement has taken place.

Dr. Miles has also favored me with a diagram showing the results of his experiments on pigs. The general results are similar to those obtained in the first series of experiments, (see *American Agriculturist* for December 1867, page 440); that is to say, there is a remarkable decrease in the amount of food consumed in proportion to live weight as the animal grows old. Thus the average amount of milk, reckoned in pounds, consumed for each pound of live weight was:

	1st week.	2d week.	3d week.	4th week.
Experiment of 1866.	3.96	3.32	2.92	2.49
" " 1868.	3.90	4.42	2.95	2.57

The gain for each 100 lbs. of live weight was:

	1st week.	2d week.	3d week.	4th week.
Experiment of 1866.	75.86 lbs.	53.92 lbs.	23.20 lbs.	23.00 lbs.
" 1868.	56.00 "	59.64 "	26.73 "	27.69 lbs.

In other words, the pigs gained 86 per cent the first week, and only about 28 per cent the fourth week. The amount of milk consumed to produce one pound of increase was:

	1st week.	2d week.	3d week.	4th week.
Experiment 1866.	7.20 lbs.	7.92 lbs.	11.81 lbs.	10.13 lbs.
1868.	6.53 "	7.50 "	12.52 "	10.56 "

These experiments were in progress when I visited the college, and it was very evident that no pains were spared to insure accuracy. There is no new point brought out by the second experiment, but it confirms the results obtained in 1866, and we may accept as established facts, 1st, That, up to a certain age at least, a young animal eats much more in proportion to live weight than an older one. Thus, for each pound of live weight, the pigs eat nearly 4 lbs. of milk the first week, and only about 2½ lbs. the fourth week. 2d, That for the food consumed, the

younger the animal the more rapidly it gains. Thus, taking the mean of the two experiments, it required the first fortnight only 7½ lbs. of milk to produce one pound of increase of animal, and more than 11 lbs. of milk the second fortnight, or over 65 per cent more.

I hope the experiments will be continued until the pigs are fat enough for the butcher. Four weeks is not long enough to give us all the facts required. These are the only experiments I know of directly bearing on the point, but it seems clear to my mind that there is an immense advantage in getting animals to eat, digest, and assimilate a *large amount* of food, for the simple reason that it takes a very large proportion of the food to sustain the vital functions, and all the growth of the animal is derived from the food eaten in excess of this amount. I believe this is now the most important point to which breeders can direct their attention. The amount of offal in well-bred animals has been reduced by skillful breeding to a minimum. Now let them aim to increase the digestive powers. Said an experienced dairyman, "I never knew a cow that was a great milker that was not a great eater." This is my idea exactly. And what we want is a breed that will eat 25 or 50 per cent more in proportion to live weight than any animals we now have. They would, *in proportion to the food consumed*, grow twice as fast as they now do. I have very little doubt as to the truth of this proposition; and if it is true, the sooner it is acknowledged and acted on by our breeders the better.

I got a letter this morning from the managing editor of the *Agriculturist* calling for "more copy," and earlier. "You country folks," he says, "ought to pass a few months in New York in winter to get a little *go* in you." New York is a very pleasant place to visit for a few days, but a whole winter! Not if I know it. It is a fact, however, that these New Yorkers accomplish an immense amount of work in a given time. People in the country think they have enough to do, but we do not work half as hard as they do in a large city. They earn all that they get, and sometimes do not get all that they earn. It is the "pace that kills." We are all inclined to go fast enough. Steady work is what counts, and you will find that the men who have accomplished the most in life are generally "country folks."

Last spring I intended to get 4 tons of Peruvian guano to put on 20 acres of potatoes, but the freight from New York to Rochester was \$22 per ton, and I gave up the idea. A few weeks after, when it was too late to sow the guano, the freight was reduced to \$3 00 per ton. Our potatoes are sent to New York, mostly by railroad. My crop did not average, for want of manure, over 75 bushels per acre. The freight on this to New York would be about \$20, or \$400 on the 20 acres. Now I have no sort of doubt that 400 lbs. of guano per acre would have given a crop of 200 bushels per acre, and the freight on this would be about \$53 per acre, or \$1,060 on the 20 acres. In other words, if Vanderbilt would have brought me 4 tons of guano for \$32 instead of charging \$88, he would have received \$1,060 for carrying back the potatoes, instead of \$400. If railroad companies understood this matter they would transport manures at the lowest possible rates. I have known the application of one ton of superphosphate on 5 acres of turnips to *increase* the yield 10 tons per acre, or 50 tons, and one ton of guano

will sometimes give an *increase* of 18 tons of potatoes. They can afford to carry a ton of superphosphate or guano at a cheap rate in the spring, for the purpose of getting 50 tons of turnips, or 18 tons of potatoes to carry back in the fall.

The trustees of one of our agricultural colleges told me that they could get ten literary and scientific professors easier than they could get one for the department of agriculture. And I notice that "one of the foremost colleges of the country" is advertising in the newspapers for a "Professor of Agriculture." This is rather hard on the trustees. I am very sorry for them.

I do not know what college it is that is advertising for a Professor of Agriculture, but I presume they will get scores of applicants! It will not be an easy matter to make a selection, and the better way would be to put the names in a hat and draw out one, and let this be the successful candidate! The chances are that he will be as good as any! Some years ago a city man who had dabbled a little in chemistry asked me to recommend him as Professor of Agricultural Chemistry to a newly started Agricultural College. I forget whether I complied or not. He knew nothing or next to nothing about agricultural chemistry, but as there are few people that know any more, I told him I thought he would probably do as well as the next man. He applied for the place. The trustees met, and it appeared that there were two candidates for the Professorship of Agricultural Chemistry, and none for the Professorship of Practical Agriculture. They made the appointments, and my friend came to me laughing and excited. "Here's a joke," he said; "those people have appointed me Professor of Agriculture, and I don't know what to do about it." "Accept, of course," I said. "You are out of a situation, and if you go down there something will turn up. Perhaps the other man will resign, and then you will probably be appointed to the chemical chair and will get along well enough." "I'll do it," he said, "but it's a great joke." And so it was. He was a good fellow, but did not know a Short-horn from a Devon, or a Southdown from a Merino, and it may well be questioned if he knew wheat from barley. His whole life had been spent in the city, and he was not to blame for knowing nothing about farming. But the fun of the joke is that he is to this day, or was the last time I heard of him, Professor of Agriculture in one of our prominent agricultural colleges, and a writer for one of our agricultural papers. And, truth to tell, he writes as well and knows as much about farming as the editor himself.

These matters will right themselves by and by. Agricultural Colleges will endure much tribulation, but there is a necessity for them, and they will ultimately prove eminently useful and be established on a permanent basis. At present, too much is expected from them by one class of people, and too little by others. The Professor of Agriculture should be a practical man and a man of good common sense. The more he knows of science and the less he says about it the better. It is not his province to tell the class how crops grow, but to show how to grow them. Let the chemist teach chemistry, and the farmer, farming. There are not ten men in the world who can teach both. Let the Agricultural Professor teach the young men how to clean a horse, how to bed him, when to water and feed him, how much he will eat, and what is the best food. And so with cows, sheep, and pigs. Fancy my old city friend a Professor of Agriculture, talking about such things to his class, and going on the high side of a cow to

milk her, and suddenly finding himself, milk-pail and gold spectacles, upset by a protesting kick. But a really practical, intelligent man could teach any young farmer a good deal about such matters that would prove very useful to him in after life. So in regard to plowing, harrowing, and cultivating. There is great need for the exercise of a little common sense about these ordinary operations. There is a chance for great improvement in the common methods of doing them. Why should a man plow when the same effect can be obtained at half the cost by the use of a cultivator? And why need a man waste half his time driving two horses on a harrow or cultivator when he can just as easily drive four and do double the work, or do it a great deal deeper and better? Let whatever is done on the farm or in the garden be done in the best manner. Let not a weed grow. Sow no crop unless the ground is in good order. If a field intended for winter wheat cannot be got into good condition, give up sowing the wheat, and plow and cultivate the land two or three times in the fall, and sow it to barley the next spring. Better have a good crop of barley than a poor crop of wheat—better far for the land, and a good example for the boys. Nothing is more important than to teach them not to expect good crops without good preparation. Let them know that there is no royal road to farming, and that there is more hope of improving old processes than of discovering new ones that shall revolutionize our system of agriculture. Let them know, however, and what is more important, let them see, that it is just as easy to raise 30 bushels of wheat per acre as 15, just as easy to raise 150 bushels of potatoes as 75, and *ten times* more profitable. A little figuring would convince any one of the fact, and yet few farmers understand it, because they think about gross receipts and not about the profits left after deducting the expenses.

I am always glad to answer inquiries about farming. I believe this is true of all the other editors of the *Agriculturist*. But they have the advantage of me. They get their letters promptly, while letters intended for me, sent to New York, are sometimes delayed. I received a batch to-day. One gentleman wants to know what tedder it was I saw at the Michigan Agricultural College,—an inquiry which is now rather out of date. Another wants to know "if the field that yielded 50 bushels of barley per acre was the same field I wanted to raise a good crop of corn off, alluded to in the *May Agriculturist*, 1867." It was the same field. Owing to the drouth the corn was not as heavy as I expected, but the clean culture and the previous manuring told on the barley. And the wheat sown after it this fall looked well when the winter set in. He wants to sow superphosphate on his barley next spring, on a corn stubble plowed this fall, and wishes to know how to apply it. Sow it broadcast before drilling in the seed. Better sow half superphosphate and half Peruvian guano, say 300 or 400 lbs. of the mixture per acre. At the present price of barley it will pay well to use a mixture of guano and superphosphate for this crop. Another gentleman, whose letter is dated Cleveland, Tennessee, wants to know all about underdraining, and also about liming land for wheat. This is too much of a good thing, and if I commenced to talk about underdraining I should never stop. Old John Johnston used to tell his correspondents to *commence* draining in the best way they could, and then if they could not find out all they wanted to know, he would help

them. Cut a narrow ditch through the land 2½ to 4 feet deep. Make it level at the bottom and so that the water will run. Lay the tiles, or stones, carefully commencing at the upper end. If the water follows you, you may be sure you are all right. Then throw in the soil on the top of the tiles, and the work is done. Better get Waring's book, "Draining for Profit and for Health." In regard to liming, I do not think it makes much matter when you apply the lime, so that you get enough on per acre. One of my neighbors applied 100 bushels on an acre of heavy clay land fifteen years ago, and he sees the effect in every crop to this day. It has entirely changed the character of the soil. My father used to put on 150 bushels per acre, and always contended that a small dose of lime did little good. It is not a popular doctrine nowadays, but I believe he was more than half right. There is no question in my mind in regard to the benefits of liming. Drain first, summer-fallow next, and then lime. The land will not forget it in 30 years. There are several other inquiries which I have not now time to notice. I take a brotherly interest in every one engaged in farming, and am always glad to hear from such.

Can the United States Raise its Own Barley?

Large quantities of barley are annually imported into the United States from Canada, and in addition to this it is said that orders have recently been sent to England for many thousand bushels. The fact is a significant one. Barley requires good land and good culture. We have abundance of good land, but what shall we say of its culture? Let the price of barley answer.

There was a time when it seemed doubtful whether we could afford to improve our farms in the older settled parts of the country as long as we had to compete with the cheap and fertile land of the West. To spend \$30 in draining an acre of land in Western New York, while this sum would buy 20 acres of choice land in Iowa, required more faith in good farming than most of us possessed. But the truth seems to be that land, in itself considered, has comparatively little value. What is it worth in parts of Texas or South America? It is the labor, skill, and capital, expended upon it directly and indirectly that gives it value. We build roads, canals, railways, towns, cities, churches, and school-houses, and every dollar so spent adds to the value of the land. In this view, the land in the West is not so much cheaper than at the East as is generally supposed; and at all events we need not hesitate to expend capital for needed improvements on our farms, for fear that the fertile lands of the West will so flood our markets with cheap produce that we cannot make a living. At any rate, if we cultivate our land at all we must cultivate it well. The only farmers who have been greatly benefited by the high prices of the last six years are those whose land is in good condition; and this will always be the case. We think there can be no doubt that our general system of farming is improving, but there is still great need of more thorough culture and manuring. The high price of barley, and the fact that we obtain such large quantities from Canada, where the soil and climate are no better than with us, and that the freight, duty, and premium on gold, give us at least 25 cents a bushel advantage in price, is a sure indication that we are not farming as well as it is for our interest to do. Barley, as we have said, requires high culture, and at present

prices we can certainly afford to put our land in proper condition to produce a large yield.

We do not, at this time, propose discussing the best methods of growing barley. Our object is to call attention to a fact that affords encouragement to those who are expending capital in the improvement of their land. Poor farmers can raise good barley. Let those who are underdraining and otherwise improving their land, and are sometimes frightened at the expense, take courage. There is an absolute necessity for an improved system of agriculture, and those who are getting their land in good condition will assuredly have their reward.

Ladders for General Use.

We all have need of good ladders. There is not a farmer in the land who has not occasion now and then to use one, and, perhaps, often trusts or risks his life upon one. It is a criminal thing to have weak, shaky ladders about, especially tall ones; for while the risk to life and limb is next to nothing upon a good ladder, he who uses an unsafe one is in great danger. In making a ladder, we prefer to use red cedar for the poles, and oak for the rounds. White cedar will answer well, and so will white pine or spruce for poles, and the rounds may be made of many different woods. Dogwood is good, cutting stems of the right size, and the bark may be left on. Hickory does well, if the ladder be kept painted, and not exposed to the weather—otherwise it rots at the ends where inserted in the poles. Cut a straight cedar pole of at least six or eight inches in diameter at the but, and of



CRANE'S LADDER SUPPORT.

the desired length, if such an one can be found. Lay it up to season six months or a year, and take care that in drying it does not get a bend. With a little painstaking it may be improved in straightness while seasoning, if not straight. Then shave off the bark and branches with a drawing knife; cut it of the right length; plane down a strip of three inches wide on opposite sides, and mark it and saw it in two in the middle, lengthways. If well done, we shall have two long, straight, sound, tough, stiff poles. Mark off the points for holes for the rounds alike in each; 14 inches is a good distance to have the rounds apart. If the ladder is to be a wide one, the lower rounds should be

an inch and a quarter in diameter, and the holes an inch, while the upper rounds need not be more than an inch in diameter. For a ladder 14 inches between the poles, inch rounds are large enough for the bottom ones, and five-eighths inch for the top. Split and shaved rounds are as good as turned ones, unless one is making a very nice job, when the rounds may be split out and then turned. It is well to make the rounds with a slight shoulder, so that the poles cannot be driven together at all by a fall. This is apt to split them, and if the rounds are simply shaved down to enter the holes, it is imperatively necessary to insert several flat rounds two or two and a half inches wide and three quarters of an inch thick, having tenons at the end, with strong shoulders, and fitting into mortises. When the ladder is put together, dip the ends of the rounds in paint; set all the rounds in one pole first; then put on the other, and finally, after sawing off the ends of the rounds, drive hard wood wedges in each alternate round, so as to spread the ends and prevent their drawing out. Wedge the flat ones particularly. With a plane, a drawing knife, and a little sand paper, the ladder is easily finished, and a good coat of varnish will make it last a long time as good as new.

The engraving represents a ladder with a support, for use in the orchard or elsewhere, applicable to medium-sized ladders, and far better, to our notion, than most such contrivances. The peculiarity is in the support, which consists of two stiff poles, very nearly as long as the ladder, fastened together by a bolt near the top, so that the bottoms may be moved apart or nearer together. There are two strong hooks inserted in these poles below where they are bolted together, and upon these one of the upper rounds is made to rest, as shown in the engraving. This is the invention of Mr. J. C. Crane, of Newark, N. J., and combines efficiency and safety. The supports are readily removed, when the ladder is needed for uses in which they are not required.

A Rotation for the West.

The agriculture of the West is, if possible, in a still ruder condition than that of the East. The course pursued by the great majority of farmers has been well calculated to destroy the fertility of the land. The aim has almost always been to get the greatest amount of present profit, with the least labor. The improvement of the land has not been thought of, or cared for. The emigrant has pitched his tent in the forest, or upon the edge of the prairie, and, with very little capital, has begun the struggle for life. Corn has been the essential crop, for it furnished food for his family and for his animals, and prepared the way for wheat, which was the main reliance for money. Corn was planted among the girdled trees, and sometimes for several years in succession, until the limbs and many of the trunks of the trees had fallen. In some of the states there are large tracts that have been planted with corn for thirty years or more, and are said to still produce forty bushels to the acre, which is a reduction of one-half from its primitive fertility. In many places corn and wheat, both exhausting crops, have been grown in alternate succession until both have ceased to be remunerative. In all the older Western States, the average yield of wheat has been reduced one-half or more, so that on many farms it is given up as an uncertain crop. Troublesome weeds have come in so abundantly that it is no

longer possible to get clean grass seed or wheat. The remedy for this unprofitable husbandry is a careful saving of manures, and a rotation adapted to the circumstances of the farmer and the character of his soil. We suggest a few that may be of service. I. 1, Corn on limed sod; 2, Oats; 3, Wheat with manure; 4, Clover; 5, Timothy, cut; 6, Timothy, pastured. II. 1, Corn on sod; 2, Oats; 3, Clover; 4, Wheat; 5, Clover; 6, Timothy. III. 1, Corn; 2, Spring Wheat; 3, Clover; 4, Wheat; 5, Clover; 6, Blue Grass and other grasses; 7, and 8, Pasture. IV. 1, Corn; 2, Barley; 3, Clover; 4, Rye; 5, Clover; 6, Timothy, and other grasses. In some places, where the land is very foul, these rotations might be changed by planting corn two years in succession, with thorough cultivation four or five times in the season. Near cities or river ports, where there is cheap transportation to market, potatoes might come into the rotation advantageously. In some localities root crops, especially turnips and beets, can be grown to good advantage. In all cases particular attention should be paid to making manure, and it is applied with excellent effect either to corn the second year, or to wheat. The idea that the new soils of the West will never need manure is already exploded among intelligent farmers. Lands that now produce but 40 bushels of corn and 15 of wheat to the acre, may be made to double their yield by the aid of manure. The increased profit of such crops needs no showing. With a good system of cropping, and the use of manure, the fertile soils of the West may be kept up to their early productiveness.

Management of Cows in Winter.

A correspondent of the *Agriculturist* inquires: "When cows are stabled nights in winter, how long should they be allowed to remain in the yard during the day?" This depends a good deal on the weather, and also on the food and whether the cows are expected to give milk or not. When the object is to obtain milk in winter, if water is supplied in the stable we would seldom turn them out at all. And if necessary to turn them out to water, we would let them out twice a day, say for ten or fifteen minutes. Cows like to be humored a little in regard to watering. They will not drink as readily as a horse. They should be allowed plenty of time. When cows are not giving milk and it is desirable to have them eat coarse fodder, they should be turned out for several hours during the day. They will eat this class of fodder much better in the yard than in the stable. Judgment, however, should be exercised. If the weather is stormy, they will be better in the stable, and at all times, if they seem cold and are not eating or enjoying themselves, let them be immediately tied up. Let the stable be well ventilated and cleaned out twice a day, and made as dry and comfortable as possible. The great defect in most stables is in not having sufficient ventilation. The ventilators should be so arranged that they can easily be adjusted to suit the weather. Make it a rule to visit the stable before retiring for the night, and see that everything is right.

FIG NATURE.—"Walks and Talks" writes: "I was amused with the picture of the jealous hog in the *Agriculturist* for August. It illustrates one of my pet ideas—that the more you can get an animal to eat, provided he will digest and assimilate it, the better. I would select the "biggest eaters" I could find to breed

from. I would not care how coarse they were. Cross them with fine-boned, thoroughbred males, and aim to combine the digestive powers of the mother with the refinement and early maturity of the sire. The main object of breeders has been to lessen the demand on the stomach by reducing the quantity of hair, horn, bone, and offal, and stimulating the growth of the most desirable points by an abundance of highly nutritious food. I do not think they have given proper attention to the digestive powers.

Conversion of Wagons into Sleighs.

We can recommend to nobody, unless it be to the village store-keeper or butcher, to attempt to use a wagon with runners placed upon the axles, or of the same width of track as the wheels, if he consults his pleasure and not his necessities. Such vehicles do very well to run

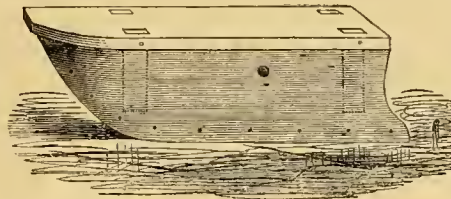


Fig. 1.—RUNNER FOR WAGON AXLE.

about in the streets of a town, but on country roads they are a nuisance. Still, many a man is caught fifty or a hundred miles away from home on wheels, when a fall of a foot or two of snow makes it next to impossible for him to proceed or return. The wagon body may be set upon runners, but this is an awkward fashion. If there is a half a day's time, and a carpenter shop is at hand, it is no very great job to fit out a wagon with four independent runners to go on in place of

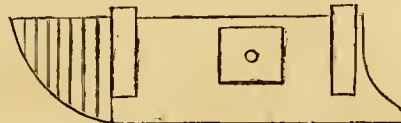


Fig. 2.—OUTER SIDE PIECE.

wheels. These may be made to fit upon almost any wagon, by the aid of a few wooden washers, and are easily stored so as to be used at any time. Each runner is made of three pieces of inch board. Two pieces form the sides of each runner, and meet at the bottom, while they are six or eight inches apart at the top. The outer side piece is sawed full of kerfs at the front end, so that it will bend around snug to the other. The two side pieces are nailed upon the edge with clinch nails, and stiffened with battens, if necessary, and these battens

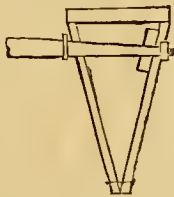


Fig. 3.—SECTION.

enter mortises in the top piece, or the top piece is simply nailed down upon the others. Two round holes are cut a little back of the middle for the axle. These should be level and exactly opposite; they need not be exactly of a size to fit the axle, but the snugger they fit the better on rough roads. A spring wagon thus arranged upon runners is the easiest running vehicle imaginable, (next to a boat or a balloon). Each runner moves independently, like a wagon wheel, and this motion, very easy of itself, is made still more gentle by the springs. The runners, if used much, may be shod with iron or steel, though if it be well to incur this expense, it is worth while to inquire if it would not be best to have the runners made with care, light and handsome, upon

regular hubs by a wheelwright or carriage maker. Figure 1 shows a single runner; fig. 2, the inside of the outer side piece; while fig. 3 shows the inclination of the sides, the top board, and the axle passing through the side pieces.

Scrub and Grade Bulls Public Nuisances.

We drive about through dairy regions and through those sections which supply our larger cities with milk, and, baring now and then a Jersey or an Ayrshire as rare exceptions, we see almost every herd of a dozen or more cows accompanied by a little yearling bull—coarse-horned, big-headed, slab-sided, long-legged, and rough-haired. In the summer, after the time of year has passed when the bulls are especially useful, we often meet on the road droves of these bulls one and two years old—the sires of the next generation of calves. These, having reached an age when they require more care and are more expensive to keep than calves, are sold for a small price and slaughtered. The calf which is selected to be raised is usually the one that the butcher will not buy, or that is dropped in some "out pasture" or in the woods, and hidden by the cow until ten days old or more, when, as it seems a pity to "deacon" so old a calf, it is kept. This is not always the case, but we believe that it is very rare that a bull is raised because his mother was a famous milker, or for any real or fancied superiority of his breeding.

This state of things prevails extensively. Farmers argue that they only need a bull in order to get fresh cows; that the calves are of no value to them; that they rarely raise their own heifer calves; hence it makes no difference to them what sort of a bull they have. They argue very foolishly. The stock of every dairy region is, to a considerable extent, supplied from its own herds. There are now comparatively few sections (and these are decreasing in number,) where it does not pay to raise veal, at least until it is four weeks old. The use of a thoroughbred bull, not even excepting the Jersey, will greatly increase the size and value of the veal. Besides, however strange it may seem, it is true that thoroughbred bulls, even of breeds not famous as milkers, as the Short-horns, for instance, get heifer calves which are very likely to become great milkers. The use of such immature sires has, according to all observation and analogical reasoning, a bad effect upon the system and functions of their get. We therefore have small cows, better calculated to eat and drink than to give milk, or lay on flesh and fat. There is not the least reason why any good animal should come of such sires, any more than a vine should bear figs. This state of things will continue as long as our milk raisers persist in using scrub bulls.

The loss to the State in the item of taxable property is very great, not only as the live stock are of much less value, but the products of the herd,—milk, butter, cheese, veal, and beef,—are vastly less. But the loss to the State is as nothing compared with that to the farmers themselves.

The use of thoroughbred sires for beef is pretty well appreciated, and in the great beef-raising districts Short-horns predominate, and the great mass of beef which comes from the West has the marks of this blood to a greater or less extent. The advantage to dairy and milk farmers is quite as real as to beef raisers, and ought to be believed in. The farmer who buys an Ayrshire or Devon bull, and before his own heifer calves mature exchanges him with a

neighbor for one of the same breed, and thus every second year makes a change, breeding always from bulls not less than three and if possible four or five years old, will have the satisfaction of seeing great changes take place in his herd and in the profits of his dairy. No intelligent farmer should use a scrub or grade bull if he can help it. The temptation to raise grade bull calves is often too great to be resisted. They are very large and handsome, they may have come of a favorite cow, and the farmer feels sure that if size and beauty are worth any thing in a bull, he will do well to raise such an one. The bull comes to maturity, handsomer than his thoroughbred sire, perhaps; nevertheless the probabilities are very likely ten to one, that the stock of his gerting will be little, if any, better than that of an out-and-out scrub.

The Canada Thistle as a Subsoiler.

An intelligent and observing farmer writes us: "Many years since I cut a ditch into a well that was seven feet deep, and laid a pipe from that well to convey the water to a barn-yard. After 16 years the pipe required repairing. To make the repairs it was necessary to dig up the pipe. I found the earth that had been cast back into the ditch was full of the roots of plants. Canada thistles seemed to enjoy this subsoiled earth very much. The difference was so marked between the undisturbed earth on each side of the ditch and that within it, in regard to the presence of the roots of plants, that I venture the assertion that the most inveterate unbeliever in deep plowing, if he could have seen this ditch dug the second time, would have admitted that there was one piece of land that deep plowing would greatly improve * * *. I spoke of Canada thistles in this ditch. This much dreaded weed is a great subsoiler, sending its roots down to water, if the water is within any reasonable distance. Take a rank patch of Canada thistles, plow it and cultivate as often as the thistles show a bit of top, for one year; then put on a crop, and mark the rank growth on the ground in which these thistles' roots have been subsoiling for years. Put on this land red clover, and let the clover roots take the place of the thistle roots, and this old thistle patch will pay about as good dividends as any land you have."—We have no doubt that deep tap-roots that descend into the subsoil bring up considerable quantities of plant-food, which, if the plants decay on the surface or in the surface soil, must add to its fertility. This is one reason why clover is such an admirable renovator of land "worn out" by superficial cultivation. But it is also true that in the case mentioned by our correspondent, "plowing the land and cultivating it as often as the thistles show a bit of top" would in itself enrich such soil as he is the fortunate possessor of.

Don't Keep too Much Stock.

Said a farmer who does not take the *American Agriculturist* to a neighbor who does: "You want more stock to make manure." It was an innocent remark, but our friend is as fond of an argument as was Dr. Johnson, and replied: "That remark indicates a lack of just ideas on the subject. It is as absurd to say I want more stock to make manure as it would be to say I want more stoves to make ashes. If I burn fifty cords of wood the amount of ashes will be the same, whether I use three stoves or a dozen, and if I use up all the fodder I have it will make

little difference, so far as the quantity and quality of the manure is concerned, whether I keep a large number of cattle, sheep, and pigs, or a small number. The value of the manure heap will depend on the grain, hay, straw, and stalks used on the farm, and not on the stock." There is considerable truth in what our friend says, and we are glad he has so far profited by the teachings of the *Agriculturist* that he realizes that the value of the manure depends on the food, and not on the kind of stock it is fed to. It is a great mistake to be overstocked. There is no possible advantage—not even in the manure heap—and not unfrequently the loss is very great. Better sell a part of the stock and feed what is retained all they can eat—enough, at all events, to keep them in a thrifty, healthy condition. If an animal is not gaining, we are losing all the food it consumes. By providing warm, sheltered, dry, and comfortable quarters we can save a considerable amount of food, but after all is done, the animal still requires about 2½ lbs. of hay per day, or its equivalent in straw, for each 100 lbs. of live weight, to sustain the vital functions and keep it from losing in flesh. What we gain in milk, flesh, or wool, is derived from the food consumed in excess of this amount.

Fix Up the Implements.

During the winter every implement and machine that will be required next spring and summer should be overhauled and repaired. Examine the plows, and if they have been neglected and are rusty, wash off all the dirt, and then apply with a swab fastened on the end of a stick, a mixture of one part sulphuric acid and two parts water. Rub the mould-board and other parts that are rusty with this liquid until the rust is all removed; then wash it off and rub it dry. Then smear it over with crude petroleum or some other cheap oil, and next spring you will be saved from the loss and annoyance of clogging. Every farmer should buy a barrel of petroleum, and use it freely on all his wagons, machines, implements, etc. It will keep the iron from rusting and the wood from decay, and in cold weather it is a useful lubricating oil. We find it absolutely essential to keep on hand several sizes of carriage bolts. With these and a brace, and a set of bits, nearly all ordinary fractures can be easily repaired. It is a great convenience, also, to have a vise, and to keep on hand an assortment of uncut nuts, with the tools for making the thread in them and also on the bolts. All these things can be obtained at a hardware store, and a farmer who buys them will never regret it. But if it is necessary to take anything to the blacksmith's shop, now is the time to do it, and when it is repaired, clean off the rust, paint it with linseed oil, and put it away for use in the spring. If the farmer or his son would go over all the implements, machinery, wagons, hay racks, tools, etc., paint them, oil and tighten the bolts, and see that everything is strong and in good order, it would not only greatly lessen the blacksmith's bill, but would save much precious time and no little annoyance next spring and summer. The winter is also the time to make whiffletrees, and three-horse eveners. It is a great advantage to have an extra set of these on hand.

LUMBER.—It is very convenient to have a supply of seasoned boards, planks, and scantling, and now is the time to secure them. Get a good hard maple log sawed up into two-inch planks for store boards, and elm into two-

inch planks for purposes too numerous to mention. A few oak and soft maple inch boards are also very useful, and oak and white ash scantling 3x3 will be very convenient to repair cultivators, harrows, etc. Scarcely anything of this kind will come amiss on the farm.

The Old Well-Sweep.

Without discussing the respective merits of pumps and open wells, we have a word to say in favor of the old well-sweep and the oaken bucket. It may be that a love for what is old, and good, and picturesque in the landscape, first inclined the writer to regard the well-sweep with favor, especially when it was associated with the mossy bucket coming, with a bound almost, sparkling and dripping, from the dark depths below; but after a pretty careful inspection and use of various kinds of windlasses, patent well-curbs, and other efforts of inventive genius to supplant it, we come back to the well-sweep as the simplest, most durable, easiest, and by far the best method of drawing water by the bucket from wells not over 20 or 25 feet deep, and perhaps it is equally useful for deeper wells. The height of the crotch, in which the sweep is hung, should be such that the sweep will be horizontal when the bucket is half way to the bottom of the well, and the sweep should be long enough and so hung that it will swing the bucket clear of the curb. The occasional binding of the bucket bail in the hook of the pole may be remedied perfectly by interposing a small round link between the eye in the bail and the closed hook on the end of the sweep-pole. We rarely see a new well-sweep nowadays, while the clattering, squeaking boxes of machinery called patent well-curbs, always getting out of repair, and rarely bringing up two-thirds of a pail of water, are seen on every hand.

Will You Ever Get Your Money Back?

Of all the sneers which beset the path of an improving farmer the commonest and the meanest is: "Will you ever get your money back?"

Let him build a large and commodious barn, large enough to accommodate not only all the stock and store that he has now, but all that he hopes to have in years to come, and with shelter for all the manure that he will make during the season, replete, too, with every convenience for economizing labor, and with such general arrangements as he feels sure cannot fail to make his work lighter and more profitable;—some carping neighbor will throw cold water on his hopes by suggesting that he probably "doesn't expect ever to get his money back."

Let him deeply plow and subsoil one of his fields at an obvious cost of \$25 an acre,—this same comment will greet his improvement.

Let him thoroughly underdrain ten acres of his heavy, cold land, at an outside cost of \$1,000, and fancy that he sees his account, in doing the work,—the same question will jar upon his ears.

For the moment, this view of the case may shake his hopes, but it is not at all a fair view to take of any permanent agricultural improvement. We do not build barns for the purpose of getting back the money that they cost, nor can we always count on an extra \$25 an acre from the crop that we raise after expensive cultivation. It would be too much to expect that \$1,000 invested in draining would come back with the first harvest after the work was done.

Who cares that it should come back at all? We can't have our cake and eat it too. A man

does not buy a farm to get his money back; he buys it to get the farm, and having it he tries to make it worth more to him than the money was.

If a barn cost \$5,000, it ought to add \$500 a year to the income of the farm in lighter work, better manure, better kept fodder, and more thriving stock.

The money spent in deep and thorough cultivation ought to let the roots of our crops so far into the ground, and give them a so much wider feeding surface, that their yield will be worth permanently two or three more dollars per acre. Generally the result will be much better.

The thousand dollars expended in draining brings easier cultivation; the ability to do work when work ought to be done; a more complete mastery over weeds; a greater independence of wet and dry seasons; and, partly because of these things, and partly from the increased productiveness of the land, the crops ought to be very much better than before the work was done. If they are \$10 an acre better, our investment has been a good one; agriculturally considered, remarkably good.

Any man whose investments on his farm will, one year with another, bring him a return of ten per cent may rest satisfied. This allows six per cent for the use of the money, and four per cent for his skill in placing it judiciously.

Let no one, then, be deterred from improving his farm to the highest point of which it is capable, and which his means can compass. To be a successful farmer, he must give his time and his chief attention to his business.

The more capital he can prudently invest in real improvements, the better scope he will have for the exercise of his talents, and the better chance for being amply repaid.

A Question Worth Considering.

The real question in regard to enriching the land by deep plowing is whether we can furnish a better "pasture for plants" at a less cost by developing on the one hand the latent plant-food in the subsoil, or, on the other hand, by thorough working and manuring the surface soil, six or eight inches deep. There can be no doubt that many of our subsoils contain large quantities of latent plant food. But we think that it is not often that they contain any more than the surface soil. The reason that our soils are not as productive as we could wish is generally not from a lack of plant-food in the soil, but because it is not in an available condition. It is inert and insoluble. And the question is how to make it available. On Mr. Lawes' experimental wheat-field, the soil of which is in no way remarkable for its fertility, he has got, by plowing the land twice, to the best of our recollection not over five or six inches deep, and by hoeing two or three times in the spring, an average yield of 15 bushels of wheat per acre every year, for a quarter of a century, without a particle of manure. By adding on adjoining plots, otherwise similarly treated, 200 lbs. or so of ammonia, phosphoric acid, potash, etc., he gets 30, 40, and sometimes 50 bushels of wheat per acre. Now the real question is how to get this 200 lbs. of extra plant-food. Can we get it cheaper by deep and thorough tillage, or by making and applying more manure? That there is abundance of plant-food in our ordinary clay loams cannot be doubted. An acre of soil a foot deep weighs about 3,000,000 lbs. Is it better to break up, work over, pulverize, and expose to the atmosphere this amount of soil, or to work over say

2,000,000 lbs. more thoroughly and frequently, and at much less cost, and expend the money thus saved in making or buying an extra quantity of manure? When we are enabled, as we soon shall be, to work our land a foot deep by steam, and to do it at the right season, we have no doubt that it will be cheaper to work over the 3,000,000 lbs. of soil until it is as fine as a garden, but to do it with horses is too expensive. We can break it up once, but that is not enough. It must be worked thoroughly afterwards, and the whole mass brought in contact with the atmosphere. This is where we usually fail. Many plow deep enough, but very few cultivate sufficiently afterwards. On ordinary good, loamy soils our rule at present should be, to plow as deep as three horses can draw the plow steadily along. The cost of an extra horse is not much. Then our cultivators should run as deep as four horses abreast can work them rapidly. A cultivator going through the soil at the rate of three miles an hour will break up the soil more effectually than one going at the rate of two miles. Three-horse plows and four-horse cultivators should be our favorite implements until we are ready for the Steam Plow.

Draining.

Now is the time to commence one of the most important parts of the work of draining.

The digging of ditches and the laying of tiles must be postponed until spring, and probably the press of other work will put it off still longer, until after harvest. But the digging and tile-laying are, after all, not the only essential items of the work. To do this is, of course, most necessary, but to do it *rightly* is the main thing. It costs no more to drain in the right way than to drain in the wrong way,—usually not so much,—and the difference in effectiveness and in durability of the work is incomparable.

Therefore, the operation should be commenced now, and quite as much attention should be given to the *plan* in the house, as will eventually be given to the *work* in the field.

Tile-draining is expensive work,—very expensive,—and it should never be undertaken without a determination to make it so complete and substantial that it may be regarded as an absolutely permanent improvement. Properly done, the work should last forever. A well-burned tile is indestructible by any action to which it is subjected in the soil, and it will withstand the slow trickling of pure water through it as long as water continues to run. There is much more danger that the action of the elements will wash away the surface of the farm than that the water flowing through the drains will wear them out. The only chances for destruction lie in imperfect construction. With such a knowledge of the subject as any farmer can acquire, with great care, and with a judicious outlay of money, it is possible,—it is easy,—to drain land in such a way that we need never again give a thought to it, further than to see that the outlets remain unobstructed. With a little less knowledge, a little less care, or a little less cost, we may easily introduce an element of weakness, which will fix a very early day for the choking up and bursting out of an important drain; and then commences the costly and annoying work of repairing.

When drains are so well laid that they need never again cost a dollar, nor occupy a day, and when it is as certain as any thing in this world can be that they will last as long as the land lasts, all that we need to do is to charge the

land, as a part of its annual expense, like rent or taxes, a sum which will cover the *interest* on the cost of the work, and there is an end of it.

But when, in addition to the annual interest money, there comes every year a charge for cost of repairs, and for damage to crops because of defective drainage,—then the work becomes a serious tax on the farmer.

When it is so meanly, so ignorantly, or so carelessly done that, in addition to interest and repairs, there comes the certainty that in ten years the whole thing will have ceased to act, bringing the whole cost of the work on the first few years of the improvement, draining becomes so expensive that no system of agriculture,—unless it be the cultivation of vegetables for market,—can bear the charge.

For the foregoing reasons, the first steps in draining land should be the following:—

1. To decide what land shall be drained.
2. To learn how the work should be done.
3. To make a plan by which it is to be done.

And these steps should be taken now, while freedom from other work allows due time to be given them.

In future numbers it is proposed to discuss these points. Those who wish to study the subject in detail are in the meantime referred to "Waring's Draining for Profit," in which the whole subject is carefully and plainly treated.

The question of *means* should never deter a farmer from draining at least a portion of his wetter land—enough to make a beginning. It is not pleasant to have to borrow money, and a mortgage on one's farm is a cloud over one's life. Still, and we say it after full deliberation, we would never hesitate a moment to mortgage land of our own to raise money for underdraining, if we could get money in no more convenient way. It is demonstrated by the experience of thousands of farmers, in this and other countries, that the yearly benefit from the draining of wet or *too moist* land is much more than any usual rate of interest, and the advantages resulting from the operation are so various and so important (aside from the mere increase of crops) that we would accept the annoyance of a mortgage rather than not to reap them.

The mortgage would be a serious annoyance, it is true, but it would sink into insignificance when compared with the feeling of being (as every farmer of wet land is) a slave to *chance*, and of running the risk of seeing the fruits of a whole year's hard work snatched from our hands by an unusual season.

POINTS OF A GOOD FOWL.—For general use a hen should be a good layer, sitter, and mother. She must be a good feeder, too, bright, clear-eyed, quick in her motions, but not scary, and with these points, she will pay to keep. Besides, she should be large, well-feathered, with small, short legs, with a small head, broad shoulders, and deep body. The cock should be thicker in the leg, broader across the shoulders, fully a third heavier. He should have a gallant strut, be first out in the morning, first to go to roost, inclined to take on flesh easily, generous in picking out titbits for the hens, and not quarrelsome. We do not associate large eyes with great hardiness. They are a great beauty, and indicate high breeding; hence, with perfection in feather and other points, they are desirable in fancy fowls. In very large breeds quick growth is desirable, while early maturity is not. Each of the different breeds has its characteristic points, and the fowl should, in addition to the above general marks, show them distinctly.



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A MEXICAN CATTLE DRIVER.—FROM A SKETCH BY MR. JUMP.—Drawn and Engraved for the American Agriculturist.

The Use of the Lasso.

There is but little in the customs of the Mexicans worthy of imitation, yet there are a few things in which they excel, and one of them is the use of the lasso. One who sees the ease with which a Mexican can capture a half wild horse or mule, and remembers the time he has spent in endeavoring to catch a gentle but frisky horse in a pasture, wonders why throwing the lasso has never become a Yankee accomplishment. The best lasso, also called "lariat" and "riate," is made of braided rawhide, and so prepared (probably oiled) as to be perfectly flexible. This is thirty feet or more long, and has an eye in one end, through which the other end is run, to form a slip-noose, which, spread out, would form a circle six or eight feet in diameter. To throw the lasso, the noose is grasped in the right hand about a foot from the eye, both parts, the running portion and that to which the eye is attached, being held; the rest is coiled loosely and held by the left hand. The noose is then whirled round the head, slowly at first but with increasing rapidity; by a revolving motion of the wrist, which cannot well be described, the noose is always kept in the same plane and

spreads out in an elliptical form. When sufficient velocity has been attained and at just the right instant the noose is let go and at the same time the coil in the left hand is allowed to play out. One skilled in the use of the lasso will take such unerring aim as to throw the noose over the head of an animal, whether it be running or standing still. A novice in his first attempts will hit anything but the object he aims at. Nothing but practice will teach its use. The Mexicans begin when children, and it is very common to see the "muchachitos" with a lasso made of a bit of cord, essaying their skill on pigs and chickens. Not only is lassoing done on foot but on horseback. One end of the lasso is attached to the horn, which Mexican saddles always have in front. The saddles are very strong, and are furnished with wide and strong girths, for when a wild animal is caught there is often a trial of strength between the captor and the captured. The Mexican horses, used to the business, brace themselves as soon as the lasso is thrown, to resist a pull, and the horseman takes an additional precaution against being unseated by clasping his enormous spurs under the horse's belly. Nowhere is the lasso used with more skill than among the Califor-

nian Mexicans. The writer has seen two, father and son, chase a wild bullock; one would catch the animal by the horns and the other by one of the hind legs and bring it to the ground quicker than it takes to describe it, and this while all were on the full gallop. The above scene, furnished by a Californian artist, represents a Mexican driving cattle. It not only shows the use of the lasso in bringing refractory animals to terms, but gives a good idea of the picturesque costume of a Mexican "vaquero," or cattle driver, and the equipments of his horse. The Mexican bit, which cannot be distinctly shown on so small a scale, is so constructed that the rider has the most restive animal quite under control. The spurs, which may seem like an exaggeration in the picture, were drawn from a well-worn pair in the possession of the writer. So far from being cruel, as most persons suppose, they are so blunt as to be incapable of inflicting a wound, and they can at most serve to give a blow. The reason for making them so large is to aid the rider in holding his seat, as alluded to above. The Mexican saddles are remarkable for their strength and the easy seat they give the rider; they are usually covered with embossed and embroidered leather,

The Akebia in Fruit.

In September last there appeared in the *Agriculturist* an engraving of a beautiful climber, the Akebia. Since then Mr. Geo. H. Hite, of Westchester Co., N. Y., brought us specimens of the fruit of this plant, which was quite new to us. Upon inquiry of those who have known the vine from its first introduction, we find that they never heard of its fruiting, and if this is not the first instance of its doing so in this country, it is at least the first in the vicinity of New York, and as such deserves recording. The engraving gives the closed fruit of the average size, and the open one reduced about one-third. It is a sort of berry-like pod, which is of a purplish-drab color, with a slight bloom. At full maturity it splits open, exposing the seeds, which are enveloped in a pulp and form a gelatinous mass. The pod is rather spongy in texture, and when freshly opened its inner surface has a roughish appearance that reminds one of a half of a cracker. We notice that the latest authorities place this plant in the Barberry family, for reasons which would not interest the general reader. The plant is one of the earliest to put out its leaves in spring, and it holds them until late in autumn. They are of a fine brilliant green, and as the vine is a rapid grower, it is very suitable for covering trellises. The delightful odor of its blossoms makes it very desirable near the house. We hope to see this interesting climber more generally cultivated, and we warn the nurserymen to provide a stock, as it is well known that when the *Agriculturist* popularizes a plant, a demand is quite sure to be made for it. It is propagated from cuttings of the old wood.

From the manner of growth of the plant and the pink-like appearance of the flowers, the popular name Moss Pink was naturally enough applied to it, though it is far removed in its

is in April and May. One of the great merits of this plant is its early flowering, and to those who love these old-fashioned plants the masses of the Moss Pink are always associated with their thoughts of spring work in the garden.—A French writer recommends the Moss Pink for edgings to beds and borders, and says it is “perfectly ravishing.”



FRUIT OF THE AKEBIA.

The Adulteration of Seeds.

A committee of the Royal Agricultural Society (Eng.), has recently reported its investigations upon the subject of seed adulteration. As a large share of the seeds sold in this country are imported, it is a matter of no little interest to our cultivators, especially as we are informed by the committee that “It was represented to the council that as the business of seedsmen is at present conducted, the purchaser of seeds frequently receives neither the kind nor the quality of the seeds he pays for.”—The causes of inferior seeds are: 1, Keeping seeds so long that their vitality is lost. 2, The addition of bad seed to good, and mixing old and new. 3, By the addition of seed whose vitality has been killed. This is done with rare and valuable seed, killed seed of similar appearance being added to increase the quantity. What seed comes up is true to kind. 4, Manipulating and doctoring bad seed to make it look like good, as by dyeing bad clover seed, sulphur-smoking bad grass seed, oil-dressing bad turnip seed, etc. The committee found that there was no sure way to test the value of seeds except by sowing. They purchased samples of Cauliflower, Broccoli, Carrot, and White and Yellow Turnip

seeds, from eighteen different wholesale houses, and trials were made both at the Society's grounds at Chiswick, and by one of the members of the committee separately. One hundred each of the above-named seeds were sown, and the numbers which came up are reported. We will only give the highest and lowest figures.

Of Cauliflower, the range was from 86 to 24; Broccoli, 86 to 35; Carrot, 61 to 14; White Turnip, 98 to 57; Yellow Turnip, 95 to 28. The subject is one that has caused no little excitement among English seed dealers and growers, and an act which shall reform the abuse is to be presented to Parliament. We are far from assuming that failure with seeds is always due to the bad quality of the seeds themselves. A want of knowledge in the sower

Phloxes—The Moss Pink.

Among the Phloxes are found some of our most charming plants. The Drummond's Phlox is not exceeded in variety and brilliancy by any other annual, while some of the tall perennial ones are late-blooming, and some of them truly magnificent. There is an humble perennial, one which is different from others of that class. Its prostrate stems are furnished with small, prickly leaves, and form dense tufts or mats, and these, in spring, are covered with flowers so profusely as to hide the foliage. The engraving shows the form of the flowers, the leaves,

relationships from the pinks proper. It is a Phlox, and the species is *P. subulata*, a name referring to its awl-shaped leaves. As it varies somewhat in the form of its leaves, as well as the color of its flowers, several names have been given, such as *P. setacea*, *P. nivalis*, etc., but they are now regarded as only varieties. The Moss Pink is



MOSS PINK.—(*P. subulata*.)

and the general habit of the plant, but the effect of a broad mat of it cannot be given in an illustration. The color of the flowers varies from purple to white, the latter being quite rare.

found growing wild in Southern New York, New Jersey, and southward. It does best in a light, sandy soil, and is readily multiplied by dividing the clumps after flowering time, which

often leads to a failure which is ascribed to the seeds. The synopsis of the report given above shows that the purchaser of seeds, as well as of other commodities, should have

some regard to the quality of the article. One of his best safeguards is to purchase of seedsmen of known good reputation. As far as our acquaintance with American seedsmen extends, we believe that they would not knowingly sell a bad article. The report confirms our often repeated advice to test the vitality of seeds by sowing a counted number and noting how many come up before risking a loss by sowing largely.

Property in Plants.

A question is now being discussed which is of no little importance to both raisers and growers of plants. In brief, it is this: Should not one who, by years of careful labor and patient experiment, produces a new and valuable fruit, or other plant, derive some pecuniary benefit from it? Books, the result of a few weeks' labor, are copyrighted, and cannot be reproduced without the consent of the author. A particular arrangement of sticks and strings for growing hops, or a combination of the posts and wires for a grape-trellis may be patented, and no one can use them without paying for the privilege of doing so. But if one, after many trials and years of failure, produces a new variety of hop, or a new grape of more value to the country than all the trellises that were ever invented, the moment the first bit of either goes out of his possession he loses all control over it, and whoever possesses the most ample means for propagating realizes the greatest benefit from it. That the originator of a valuable plant should be remunerated no one will deny. How protection can be assured by law is not so easy to see. Several earnest horticulturists, who think something should be done, are moving in the matter, and it will, probably before long, be presented to our law-makers.

Crab Apples.

Fruit growers are just now paying considerable attention to Crab Apples. It we were asked to define a Crab Apple we should be much puzzled, as the subject, both in pomological books and in nurseries, is "rather mixed." The term is applied to the wild state of our cultivated apple (*Pyrus Malus*), to two Siberian species or varieties (*P. prunifolia* and *P. baccata*), and to two native species of apple (*P. coronaria* and *P. angustifolia*). More than this, some small apples of doubtful origin, which may possibly be hybrids, are also called crabs. Years ago when we had only the kind that bore small, waxen looking fruit from which the calyx dropped, there was no trouble in distinguishing a Crab Apple. This was the Small Siberian Crab (*P. baccata*.) Then came the Large Siberian, both red and yellow, which was like the other in most respects, except that the fruit was larger and the calyx remained. This is the Siberian Plum-leaved Apple Tree (*P. prunifolia*.) Of the sorts more lately introduced, the origin is doubtful. Leaving pomologists to settle knotty points, we may say that those apples which have, so to speak, Siberian blood in them are hardy and productive, and though the fruit is not always of the first quality it is generally good for cooking, and the trees by their hardness are especially suited to cold climates.

From the great beauty and profusion of the fruit the Crabs are worthy of cultivation as ornamental trees, while at the same time, the apples will be found excellent for preserves and jellies. We enumerate the most prominent varieties: *Currant Crab*, cultivated for ornament,

it being showy both in fruit and flower. *Small Red* and *Small Yellow Crab*. These are the kinds referred to above as dropping the calyx; very showy in fruit. *Large Red* and *Large Yellow Crab*. These bear fruit about twice the size of the foregoing, do not drop the calyx, and the trees also have differently shaped leaves.

Transcendent Crab. Said to have been discovered on Long Island. A great bearer, with most beautiful fruit, and withstands the severest cold of our northernmost localities. The foregoing are ripe in September and October. We have now a winter crab, which is said to keep until spring, called the *Marengo Winter Crab*. This is very strongly advocated by the proprietor, who brings good testimony in favor of its quality. We have not seen the fruit.

The Soulard Crab is another new variety, which has been supposed to be of Russian origin, but Mr. Soulard, in the Gardener's Monthly for July last, gives its history. A thicket of native Crab Apple trees near St. Louis, Mo., was cut down, and another crop of trees afterwards sprang up, in which was found the variety now known as the Soulard. He supposes it to be a hybrid between the Wild Crab (*Pyrus coronaria*) and the cultivated apple. Said to be very fine for cooking and with care to keep for two years.

Our Wild Crab, so beautiful in flower and foliage, bears a fruit of marked fragrance, but of little value. We learn that an improved seedling of it has been exhibited in Canada, but no particulars are given concerning its qualities.

Fresh Figs.

There are many places in which fresh figs might be enjoyed at the expense of a little trouble. We read in our exchanges of their success in Southern Ohio, but it is not stated if any protection is given. Good crops are obtained around New York City if the trees are laid down and covered with earth in winter. Those of our readers who live in the South and Southwest should have them in abundance, and those who live in still colder climates would, no doubt, succeed if they gave their trees some slight protection during winter, such as branches of evergreens. White's Gardening for the South enumerates twelve varieties known to be good; the Brown Turkey, Small Brown Ischia, and Celestial, are considered the hardiest. Mr. Van Buren, who wrote the article on the fig, recommends that growth be stopped after the middle of September, by breaking off the ends of the shoots and removing all fruit that forms after that time. Rivers, in his Miniature Fruit Garden, gives a plan successfully followed in England, and worthy of trial here.

"The trees should be low or half standards, or dwarfs with a clear stem (not bushes branching from the ground). The former should have a stem three feet high, and the latter, one from one foot to eighteen inches; in each case the tree should have a nice rounded head.

Trees thus selected should be planted in a sunny situation, and require only the following simple mode of treatment. They, we will assume, were planted in March or April. They will make a tolerably vigorous growth, and must be pruned by pinching off the top of every shoot as soon as it has made six leaves, leaving five. The stem must be kept quite clear from young shoots. By the autumn, nice round-headed trees will be formed, and about the end of October they should be taken up (their leaves cut off, if they have not fallen) and placed

in a cellar—no matter if dark, but a light, dry cellar would be preferable—some earth should be placed over their roots, and there they may remain till the first week in May, when they should be planted out, and the same routine of culture followed. They will bear one good crop of fruit in a season, and ripen it in September. This annual removal brings on great sturdiness of growth in the tree, and the roots become so fibrous as to hold a large quantity of earth, which should not be shaken from them when they go into their annual winter abode. In the year 1857 I saw fine trees thus treated in the garden of the Duke of Altenburg, in Central Germany; their stems were as stout as a man's leg and their heads full of fruit; and this season, 1865, my fig-trees, taken up last October, and placed in the orchard-house during the winter—their roots in the soil—have given me a crop of very rich, well-ripened fruit. The roots that have borne best are the Brown Ischia, Brown Turkey, and Brunswick."

BROWNED LEAVES occur upon house plants, especially if the temperature of the room be high, much to the annoyance of the cultivator. In the majority of cases, the trouble is caused by the insect popularly known as the "Red Spider." It is so small that it requires sharp eyes to see it, and one would hardly think such a mite of a thing capable of producing so much damage, yet it is one of the worst pests, not only of the green-house but of many open air plants. The red spider will not flourish in a moist atmosphere, and frequent drenchings are fatal to it. The remedy is to shower the plants frequently, especially the under sides of the leaves. If you have no syringe, lay the plants down and shower them from a watering pot with a fine rose.

GROWING STAKES.—Gardeners and nurserymen who live upon the prairies can, with a little trouble, raise stakes and poles for vines and other plants. One of the best of the quick-growing things is the Ailanthus, which is in some places grown for vineyard purposes. The Deciduous Cypress of the South, perfectly hardy in the climate of New York, in a few years from the seed, makes fine and durable stakes. Osiers answer an excellent purpose for small grape and other vines requiring support.

An Edging of Apple Trees.

Last autumn we saw one of our best known nurserymen preparing to plant dwarf apple trees along the borders of his fruit garden. This plan is very popular in Europe, where it is called the "cordon horizontal." The trees must be purely dwarfs and on Paradise stocks, and are set at five or six feet apart. A wire is stretched upon stakes at a foot or eighteen inches from



FIG. 1.—CORDON OF APPLE TREES.

the ground, and the trees cut back to the height of the wire. Two of the upper shoots are trained along the wire and all the rest removed. Another way, and one we have seen successfully practiced, though the result is not so neat in appearance, is to bend the trees down and fasten them to the wire without cutting them back, as shown in figure 1. Where a tree treated in this way is long enough to reach the next one, the

two are inarched. The form of cut for inarching is shown in figure 2. The parts are interlocked as in whip grafting, and bound with waxed cloth. The operation is done in the spring, and in the spring following the extremities of the inarched trees are removed. The



Fig. 2.—INARCHING.

trees are kept in a very dwarf state by pinching, and while they are very ornamental in appearance, they bear a considerable amount of fruit. This plan of growing trees is of course commendable only to those who are sufficiently enthusiastic to take the proper pains with it. The apples must be on the French Paradise stocks, and not upon the Doucin, which dwarfs but little.

The Scuppernong Grape Again.

The following communication is from "E. M. W.," Craven Co., N. C., and we are glad to hear about the Scuppernong from one who apparently knows something about it. The statement made in our article published in November, that "the fruit is said to be produced on spurs two or more years old," was made with great misgivings. We could not understand it, but as the point was made by several Southern writers we put it guardedly—"is said." Mr. Van Buren, in his pamphlet upon this grape, repeats the statement in almost the same words. Mr. E. M. W. says:

"My knowledge of that vine and its seedlings is derived from an intimate acquaintance with my vineyard of 56 acres, planted exclusively with the Scuppernong (white) and the Thomas, Flowers, and Mish seedlings (black or purple).

"It is true that 'the fruit of these vines drops from the cluster when ripe,' that is, *thoroughly* ripe, at which period the berry is very tender and juicy, with thin, soft skin, while its stem has become quite brown and slightly shrunken.

"The fruit is said to be produced on spurs two or more years old, and not, as is the case with other varieties, upon shoots of the current season.' It is hard to conceive how any one at all acquainted with the fruiting habit of the vine could have committed such a mistake. The fruit is invariably borne upon *shoots*, though these shoots are frequently quite short and grown from short canes—due, I think, to the immense amount of wood carried by an unpruned vine six, eight, or more years old. I practice both summer and winter pruning on my vines with entire success, and 'that the vine is not shortened in by pruning' generally, 'but allowed to spread over a large space,' is due firstly to the fact that the health of the vine does not seem to suffer thereby, and secondly to the prevailing notion that summer pruning will kill the vine. This opinion had its rise in the days when men thought an empty whiskey, vinegar, or molasses barrel a good enough vessel for the must; their smoke-house or corn-crib an excellent place to keep wine; and when sugar in large quantities, whiskey or brandy, was necessary, to prevent acetic fermentation.

"So far north as Hammondsport, N. Y., I doubt not that the must was deficient in sugar. Indeed, I think with you that the Potomac River is the northern boundary of its successful,

certainly its profitable, culture. But here, in Eastern Carolina, the must of *ripe* grapes needs no sugar, to make a fine table or medicinal wine.

"I have had the fresh must of the Scuppernong grape, strained through linen, to register 96° on Oechsle's scale, at 60° (Fahr.) temperature.—[The must tested at Hammondsport was from grapes raised in North Carolina.—Ed.]

"The most sanguine friend of the Scuppernong has never supposed that in it he had a grape equal to the Riesling or Pineau; but what in simplest justice we may all claim is, that in the Scuppernong we have a vine hardy and prolific, entirely free from mildew, rot, and the depredations of insects, giving us a never-failing crop of grapes capable of a dry or sweet wine, either white or red, of fine body and bouquet."

APPLES FOR CANADA.—D. W. Beadle, Esq., an eminent pomologist of St. Catharines, Canada, in an essay which received the prize at the Ontario Fruit Growers' Association, gives the following selection for the colder parts of the Province: Red Astrachan, Duchess of Oldenburgh, St. Lawrence, Snow Apple (Fameuse), Borassa, Pomme Grise, and Golden Russet. "If there be any spot so chill and inhospitable that these varieties will not thrive, recourse must be had to the still more hardy Crabs, of which the Yellow Siberian, Golden Beauty, Montreal Beauty, Transcendent, and Hyslop are the best."

Progressive Horticulture.

Only those who are familiar with the English and Continental works on Horticulture are aware how different are not only our own practices but our own horticultural literature.

Until a comparatively recent date, our few works copied closely after European models, and processes quite unsuited to our climate and our social conditions were taught and followed. Our peculiarities of climate, and the necessity of supplying a wide extent of country with trees and plants both rapidly and cheaply, have made it necessary to depart from the old ways, and to adopt processes suited to our needs. The propagation of trees by root grafting enables their multiplication to be carried on with marvellous facility. Propagating by root cuttings, so clearly set forth in Fuller's Small Fruit Culturist, has revolutionized the manner of increasing some of our small fruits. Henderson, in his Gardening for Profit, showed what must be done to make gardening pay. Warder, in American Pomology, gave us some of the Western labor-saving expedients, and now comes Peter Henderson with a "Practical Floriculture," in which is shown that our methods of raising ornamental plants are as widely different from those of Europe as are our processes in other departments of horticulture. Cutting adrift from old formulas, Mr. H. presents us his way of doing things, and to those who do not believe that his methods are practicable he says: "Come and see our plants." We can only refer to a few of the many points in which Mr. H. departs from the rules. Instead of having, as do some authors, nineteen different composts, he has but one for all species and varieties of plants. Two-thirds decayed sods and one-third rotted waste hops from the breweries, or well-decomposed manure, serves to grow everything. Other writers are great upon drainage; the pot must be filled to such a depth with broken crocks, then moss or fibrous peat, and great stress laid upon the right doing of this. Mr. H. is equally eloquent upon drain-

ing, but he makes the point that it is not necessary to do it at all. We were always told that to insure success in making a cutting the stem must be divided at a joint, and then to root it, it must be put in silver sand. Mr. H. tells us to cut anywhere, and that one kind of sand is just as good as another, and that coal dust, or anything else that will serve as a proper medium to hold moisture, will do just as well as sand. These are a few of the radical departures from the stereotyped way of doing things. Mr. H. places great stress upon doing everything at the proper time, and not the least valuable portion of the work is a calendar of the operations at his establishment for each day in the year. Mr. Henderson's reputation as a successful florist is so well established that the best commendation we can give the work is to say that it gives the processes upon which his success has depended, and it will be useful alike to the amateur, private gardener, and professional florist. The work adds another valuable contribution to the literature of progressive horticulture.

POKE-WEED "HARDY."—A few months ago some one wrote to the English Cottage Gardener that he had seen the Poke-weed or Pigeon-berry growing in the open air in Belgium. This brought out statements that in several gardens in England it was hardy, and grew as finely in the open air as it did under glass. This reads strangely to those in this country who are troubled to get rid of the plant, and who know that our winters never get cold enough to kill it. It is probably because the summers are not hot enough in England that the plant is a rare one. When loaded with its ripe clusters of almost black fruit it is a fine plant, only with us it lacks one important quality—rarity.

Osage Orange—Seed and Plants.

The Osage Orange will doubtless continue to be the popular hedge-plant in those portions of the country where it will endure the winter. Formerly the supply of seed came from Texas and Arkansas, but at present so many old hedges have come into bearing that the amount of northern seed is quite large. The difficulty of extracting the seed from the balls or "oranges" has with some been an obstacle to the use of home-grown seed. A correspondent, "A. W.," gives his method of treating the seed, with some useful hints on the management of the plants: "Let the balls remain outdoors all winter, but out of the way of cattle, as some will eat them as soon as they would turnips, while others will not touch them. Gather up the balls and place them where they will freeze and thaw all winter, and in the spring, when the frost comes out of the ground, they will be soft and mushy. Place a *portion* of them in a tub, and with a hoe or pounder mash and work them up thoroughly; then fill up the tub with water, stir, let it settle for a few minutes, and then pour off the water. Continue to wash until the seeds are left clean. It would be well to do the washing near a brook or spring, as it takes more water to clean them than one would suppose. To prepare the seed for sowing, soak them in water, (warm, not hot,) for 6 or 8 days, changing the water every day, and keep in a warm place, such as near a chimney or under a stove. At the end of a week or 8 days, turn off the water, cover the seed with some thick woolen cloths, to prevent them from becoming dry, and keep in a warm place until they sprout. If convenient, drill in the seed in rows as early as possible, for the earlier in the

spring the seed is planted, the larger will be the plants in the fall; but if other work is pressing at the time, the seed will not spoil, for I have left a portion of mine that I washed out last spring for three weeks after they had sprouted, and then sowed them. To all appearances every one grew, but the plants are not as large as those that were sown first. I sowed but a small patch, as I was afraid they would not grow, but from my little spot I have just plowed up 7,568 No. 1 plants. In setting out hedge-plants I never use a dibbler, or dibble, as some advocate, but plow a land and make a dead furrow where I want the hedge-row, then plow in the bottom, or, in other words, subsoil the dead furrow; in this I set my plants 18 inches apart. Some set only 8 inches apart, but I think the fence made in my way is the cheaper in the end, and equally good. By so doing the roots can be placed somewhat as nature placed them, but this cannot be done when they are poked into a small hole made by a dibble. Turn on the soil with the plow or shovel, and pack it with the foot; keep the ground clear from weeds by the use of tools, or by a mulch; let the plants grow without trimming until large enough to slash (that is, cut partly off, and bend over). I have plants that I cut nearly off near the ground last spring and lapped, that have borne hedge apples of full size the past summer."

The Swiss Chard, or Leaf Beet.

Mention has been made of the Swiss Chard several times, and now that those who take an interest in their gardens are deciding on what to plant next spring, we wish to describe it more particularly, and press its claims more forcibly. The Swiss Chard, also called Leaf Beet, White Beet, and Sea-kale Beet, is so different in appearance from the common beet, cultivated for its root, that some have considered it a distinct species, but it is now regarded as only a marked variety, in which the leaves are remarkably developed at the expense of the root. The root of the Swiss Chard is small, badly shaped, tough, and worthless. The leaves have remarkably large stalks, and the leaf proper is very fleshy and succulent. The engraving gives a leaf much reduced in size. There are white, yellow, and red varieties, the white being the best. The red kind is sometimes used in Europe, for its fine color, in planting ornamental beds. The sowing and culture are the same as with the common beet, and to get a rapid growth of leaves the soil should be pretty rich. The great value of this plant is that it produces a supply of the finest greens during the hot summer months, when spinach cannot be had. The outer leaves are pulled off for use, leaving the central ones to develop. In cooking, the entire leaf may be boiled, or the green portion cut away from the stalk, and each part cooked separately. The green portion or blade

of the leaf, cooked and dressed precisely as spinach, forms a most acceptable substitute for that vegetable. The stalks, tied in bundles, boiled and dressed the same as asparagus, are



SWISS CHARD, OR LEAF BEET.

liked by most persons. These stalks are called in France the "Poor Man's Asparagus." We believe that the seed of the Swiss Chard is kept at all the seed stores, and we recommend all lovers of good vegetables to make a trial of it.

ishes as we come northward, and in the Northern States we have only three species, all of them being low-growing *Opuntias*. The commonest one is the well-known Prickly-Pear, (*Opuntia vulgaris*), which is not rare in the vicinity of New York, and is hardy considerably north of that. Another is Rafinesque's Prickly-Pear, (*Opuntia Rafinesquii*), found in Wisconsin and westward, and the third, the Missouri Prickly-Pear, (*Opuntia Missouriensis*), found also at the far West. These have a close resemblance in general appearance, but differ in their spines and other particulars. The engraving shows the common and Rafinesque's species. Their flattened, jointed stems are very striking. These stems, being flat and green, are popularly considered as leaves. The proper leaves are very small, being only about a quarter of an inch long. They are only to be noticed on the young growths, as they soon fall off, and usually leave a tuft of bristles or a few stiff spines to show where they stood. The common species is less spiny than the other two. The flowers of all three of our species are yellow, Rafinesque's sometimes having a red center; they open several days in succession. The berry is of the shape shown in the drawing, and when ripe, is edible in the two species there given. It has, however, no very marked flavor, but the fruit of some of the natives of warm countries is really delicious. In eating the fruit, care is requisite to avoid the spines with which it is beset. The *Revue Horticole*, a journal usually very accurate in its statements, had an article some months ago on Rafinesque's Prickly-Pear, in which it stated that it is abundant around New York, and that the fruit is to be found in the markets, where it is regarded as a delicacy for children. This is as far from true as can be. These Prickly-Pears form dense, spreading tufts, and, being perfectly hardy, they are



PRICKLY-PEARS—COMMON.

RAFINESQUE'S.

Our Native Cactuses—Prickly-Pears.

Northern Mexico and parts of Arizona are the "head centres" of the Cactus family, where it often makes up a large share of the vegetation. These singularly shaped and often terribly spiny plants present a great variety in form and size, some being only an inch or two high, while others tower up to forty feet or more, and by their often brilliant and showy flowers at seasons, make gay the otherwise dreary wastes they inhabit. The number of species rapidly dimin-

of easy cultivation. Their odd forms, and the fact that they will live in the most unpromising places, make them well suited to plant upon rock-work. These plants should be handled with care, as their minute bristles easily penetrate the skin and cause troublesome irritation. The Mexicans plant a large species with formidable spines upon the top of their mud fences, where it forms an effectual barrier to fruit-stealing boys. Many of the Cactus family are cultivated for the beauty of their flowers, and belong to different genera from these native species. The Epiphyllums, popularly known as "Crab's-claw Cactuses," on account of the shape of their jointed stems, are desirable winter-blooming plants. Several species of *Cereus* produce flowers of great size and of gorgeous coloring. These are summer blooming, and during the winter should be kept nearly dry and at rest. In summer they produce a fine effect set upon the piazza, or they may be placed in the border with the pots plunged in the soil up to the rim. The rare Night-blooming *Cereus* requires a hot-house,

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

A Rustic Flower Stand.

Ladies, with the assistance of some of the male members of the family in the rough portions of the work, can make "rustic work" equal to that sold in cities at high prices. A good stock of crooked



RUSTIC FLOWER STAND.

limbs, large and small, is required. Cedar, Locust, Wild Grape and others, come in play. Much skill can be displayed in taking advantage of natural distortions, an instance of which we give in illustration of a stand for flowers. This is not a fancy sketch, but was drawn from one constructed by a regular maker of such work, and is one of the most beautiful we have seen. It will be noticed that instead of the shallow bowl usually furnished for the reception of the plants it has a small tub of sufficient depth. A powder keg or other small keg, sawed in two, serves excellently for such purposes. Nail all the staves securely to the hoops.

Household Talks.

BY AUNT HATTIE.

ECONOMY IN SOAP.—Soap lasts much longer when cut into squares and dried, than when left in the bars and cut up as wanted. Leaving economy out of consideration, how much more convenient it is to have the soap in proper shape for using, than to be obliged to get a knife or find a string every time a fresh piece is needed! I have often seen washerwomen and careless girls break a bar of soap in two with their hands, thus leaving long ends to each half. Of course where this is done, there must necessarily be a good deal of waste. I find that by buying a box at a time, I can get it a few cents cheaper in the pound, and I store it away and deal it out as it is required. I know that many providers consider that where stores are bought by the wholesale, much is wasted and sometimes a good deal is stolen. Of course this will probably be the case where the housekeeper neglects the obvious duties of keeping articles under lock and key, and dealing them out as required. After cutting into proper shape, the rough edges must be trimmed, and the pieces or scrapings may

be melted and made into a ball or square. By following this method all waste soap is avoided.

CHRISTMAS OR PLUM PUDDING.—This pudding, which I make for Christmas, is equally good on any other occasion. I usually make it many weeks before the time at which it will be eaten, but you know that these rich compounds improve very much by keeping. I have known them kept a year with manifest improvement. I think my receipt a good one; it is as follows: Reduce to crumbs a pound of bread, freed from crust, add to it one pound of brown sugar, chop, and add three-quarters of a pound of beef suet, and a pound each of dried, well-washed, foreign currants and raisins. Add half a pound of citron or candied orange peel, chopped fine, and grate a nutmeg over it. The juice of a lemon will be an improvement. Mix well together with six or eight eggs, well beaten. Pack firmly in bowls. Let them be heaped full and the pudding made smooth and round. Then a white cloth should be tied down with a string, and the whole boiled for four hours. When it is made some months before using, it should occasionally be put into a kettle of boiling water and boiled for an hour.

BREAD MAKING.—My bread, or rather dough, was sour this morning, and I found it necessary to work in a teaspoonful of soda before baking it. The soda was first dissolved in a little water. This misfortune of having sour dough to deal with is one which seldom occurs with me. It was at this time owing to an experiment. A neighbor of mine recommended me to try her way, which was to set the sponge in the afternoon, to work it over with the flour before going to bed, and bake the first thing before breakfast in the morning. I know many persons follow this plan, but I think inexperienced housekeepers, and especially late risers, should adopt my method. It is this: Set the sponge just before going to bed, then in the morning, the first thing, work in the flour; when well risen, mould into loaves, set to rise for half an hour, and bake.

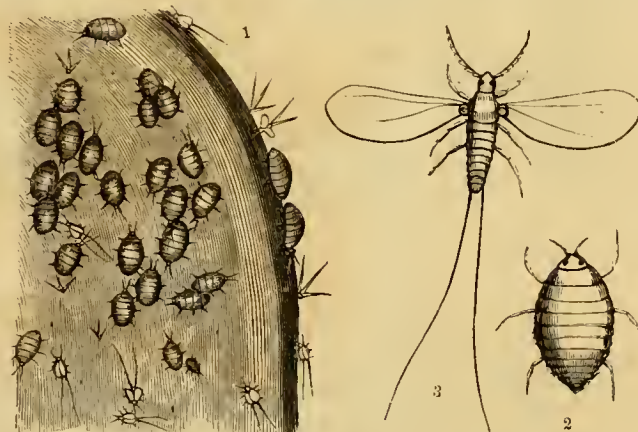
ABOUT TEA.—For some time past we have had miserable tea, or rather an apology for tea. Mary had become so careless in the making of it that it was really undrinkable. Sometimes it would be almost as black as ink, and at others of a decided pink shade after the cream was added, and occasionally as weak as water. I considered the case desperate enough to make a decided stand in favor of good tea; so not long ago, just about tea time, I went into the kitchen and said: "Mary, I want you to put away the tea steeper, as I do not wish it used any more, and you will make the tea after a different plan." "Well! and indeed, mam!" "Never mind, Mary," I said, "I know that you desire to please me in everything, and it is my wish to have the tea made in another way. Take the teapot and rinse it out with a little hot water." Mary did so. "Now put in three teaspoonfuls of tea and fill the teapot with boiling water." It was done without any more demur. "Now, Mary, put it on the top of the water boiler; never put it on the stove, as I do not wish it boiled. Always make it in this way, and only just before tea is ready to be served." Mary has followed these directions ever since, and the result has invariably been tea of delightful flavor. The fact is, the Chinese never stew their tea, and the French never boil their coffee, and we can learn something of these nations as to the best method of preparing their great national beverages.

Dyeing Tan Color.—Our housekeeping friends have sent numerous responses to our

request for directions for coloring cotton, especially carpet warp, of a tan color. Several recipes use hemlock bark or its extract. The fullest of these was given in the November "Basket." Mrs. N. J. Fairn, Jefferson Co., Tenn., says: "Boil the outside hull of the black walnut until a strong liquor is obtained, remove the hulls, and put in either cotton or woolen yarn; boil ten minutes; take out and dip in a pail of strong lime-water. Continue the process until the color suits. A decoction of chestnut or walnut bark will answer instead of the above, using lime-water after boiling the yarn." Mrs. S. J. P. sends a recipe, but as we do not quite understand it, we do not give it.

Cochineal and its Uses.

The question "What is Cochineal?" at one time was the subject of much discussion, some holding that it was a seed, and others that it was an insect. To such an extent was this controversy carried, that early in the last century a Spaniard lost his whole fortune upon a wager that it was of vegetable origin. It is an insect, a species of *Coccus*, of which we have some troublesome relations in the form of the scale insect which attacks our fruit trees, and the Mealy bug, sometimes so troublesome in plant houses. The Cochineal insect is found upon the Nopal, a species of *Opuntia* or Prickly-Pear. The Nopals are cultivated for the purpose of raising the insect, and have the general appearance of the Prickly-Pears figured on page 22, except that they have a more upright habit, and grow from ten to twenty feet high. The Cochineal insects are in many respects like our plant lice; the females are wingless, and after they have once fixed themselves by their proboscis to the plant from which they draw their sustenance, they never move. The males, being winged, present an altogether different appearance. Fig. 1 shows a number of females feeding upon a portion of Nopal. At figure 2, an enlarged female is given, and at figure 3, a male, also enlarged. The female lays "several thousand eggs" which, as in our scale insect, are concealed under the dead body of the mother until they are hatched, when the young insects fix themselves to the plant, to complete their growth. The insects are brushed from the plant and killed, either by plunging in boiling water or by a dry heat, and when thoroughly dried are thrown into commerce. Cochineal, as it is found in the shops, consists of numerous grains about the size of a kernel of barley, and in appearance so unlike an insect that it is not



COCHINEAL INSECTS—MALE AND FEMALE.

strange that its nature was so long in doubt. The best has a purplish-gray color, the blackish varieties being less valuable. It takes about 70,000 of the dried insects to make a pound. When broken open, the grains present a dull purplish color, and this is imparted to water in which cochineal is soaked. By the use of mordants, cochineal yields some of the most brilliant colors. The fine scarlets are produced by cochineal, with the tin mordant (chloride or muriate of tin). The use of alum gives a crimson. The brilliant and costly paint carmine is obtained by adding alum to an infusion of cochineal.

neal; the carmine is deposited and afterwards dried. The principal use of cochineal for domestic purposes is in coloring jellies, icces, etc. For these purposes it is prepared as follows: take an ounce of cochineal, an ounce of cream of tartar, one-fourth of an ounce of alum, and half a pint of water, put into a tin or glazed saucepan, and place over the fire until it boils; let it stand until cold, and pour off the clear liquid. If the coloring is to be kept for a long time, dissolve enough white sugar in it to form a syrup, and preserve in bottles. This is the coloring generally used by confectioners and pastry cooks, and is perfectly harmless. Carmine is used in the preparation of the finer kinds of red ink. It is very soluble in ammonia, and a much more brilliant red ink than is usually sold may be made by dissolving a few grains of carmine in a small quantity of water of ammonia (hart-horn of the shops), and adding a little gum Arabic to prevent it from spreading on the paper.

The Table—Order and Ornament.

That the appearance of the table affects our enjoyment of the food, no one will deny. Were this not the case, table-cloths might be dispensed with, and it would be a matter of indifference whether our plates were of tin or of china. How far we should regard the appearance of the table will depend in part upon one's tastes, and in part upon one's means. Ornamentation to a certain extent is pleasing, but this generally takes time—just the thing which housekeepers in general can least afford. Such things, except in the most simple form, are better left for the wealthy, who can pay for the necessary service. Still there are many things pertaining to order and neatness that take scarcely any time in their execution, and which even the housekeeper who is her own cook and waiter can observe, if her attention is called to them. At present we will refer only to "dishing up." So simple an article as mashed potatoes is capable of looking at its best. A shapeless, pudding mass, such as is often dumped into a dish, is far from being attractive in appearance. Smooth this down with a knife to a neatly rounded surface, and the whole look of the dish is changed. Set the dish in a quick oven, to brown the surface, and you have a work of art. Nothing is more distressing than to see a roasted fowl come to the table "flying" with outspread wings, and legs looking as if the bird had kicked before the fire. A turning of the wings and a bit of string around the legs would have converted the ridiculous object into a respectably dressed fowl. Even so simple a thing as mutton chops may be neatly served or otherwise. Let one compare a dish of chops thrown into the plate "higgledy pig-gledy," with one in which the small ends are all laid one way, with the broad portion slightly overlapping, and the difference will be manifest at once. Other illustrations might be given, but these will indicate what we mean by neatness in dishing up. Such matters may seem trivial to some, but much of our comfort is due to the observance of trifles.

Treatment of Hams.

Mr. Stephen Bowman, Rensselaer Co., N. Y., having in early life become dissatisfied with ordinary ham and bacon, tried to improve upon them, and at last concluded he could accomplish his purpose by smoking the tub instead of the meat. He is satisfied with his plan, which he has practiced for fifty-two years, and communicates it substantially as follows: Place the tub over a small fire made of corn cobs, green walnut, or rock maple, and smoke for about four hours. For one hundred pounds of meat, use four quarts of salt, two ounces of saltpetre, and two pounds of sugar. Before the meat is put into the tub, rub a little salt in near the bones, and place a part of the salt in the smoked tub; then put in the meat rather loosely, cover with cold water, and put in the sugar, saltpetre, and the remainder of the salt. The hams will be ready for use in three weeks. The above is for cold weather; as warm

weather comes on more salt is to be added, and if a stronger flavor of smoke is required, remove the meat and brine, and smoke the tub again. Beef may be put in the tub with the hams and in about six weeks taken out to dry. Mr. B. claims that this method is easier, cheaper, and better than the usual way, and that the hams are completely kept from the attacks of insects. Any portion of a cut ham may be returned to the brine. He states that he has kept hams in this way until October.

An Irish Stew.

On a cold winter's day an Irish stew is a very toothsome thing. Many compounds called by the name are not the real thing, and we have seen heterogeneous mixtures of beef and various vegetables served as Irish stew. You can no more make Irish stew out of beef than you can make pea soup of pebbles. Mutton is the basis; beef makes a good stew, but it isn't "raale Irish." Then this stew is not only good but economical, as the neck piece of mutton is the part generally preferred. Cut the neck into chops, and wash if bloody. Two and a half pounds of mutton require eight good-sized potatoes, four small onions, and a quart of water. Now in the cooking judgment is required; the meat must be thoroughly done, so as to leave the bone readily, (for picking is a part of the pleasure in eating the stew) and the potatoes must be cooked to that point at which they are just ready to go to pieces and have absorbed a good part of the gravy. So if the meat appears at all tough, it had better be stewed awhile by itself; then add the potatoes cut in thick slices, the onions, and pepper and salt. It is to be served very hot, as it is apt to be very rich with fat, and mutton fat hardens readily. This is, of course, not a dish for those who cannot tolerate fat; but most persons who take much exercise in cold weather actually need a good share of fatty food.

Household Economy.

Mrs. H. M. R. writes: "I have commenced fixing an old calico dress to-day. It was worn off at the edge on the bottom, and on the edge of the wrists. I ripped it off the waist, took off the facing, unbemmed the pocket-hole, and ran a seam the entire length of the skirt where it was; then made a new one in another breadth, in the end that was at the bottom before, and mended such little "nieks" as happened to be in the skirt. I ripped out the sleeves from the waist and put the right sleeve into the left armhole, and vice versa. This brings the worn side on the top of the arm, where it will get but little more wear. Then I put new bands on the wrists, and the dress is ready for the wash-tub, which will take out all the wrinkles at the top of the skirt, and it will be ready for the facing, which should be turned bottom upward also. What I did to-day took about three hours, and it will take three or four more to finish by attaching the skirt, bottom upwards, to the waist, and make it ready to wear after it is ironed; then I shall have a dress that will wear more than half as long as a new one, in place of one that would have lasted only a few weeks at most, if it had not been fixed. The dress should not be worn too long before the change is made. When the edge of the wrists is worn off is the right time, if the cloth is good, and do not buy any other.

I always make my afternoon aprons for house wear of two widths of calico a yard long, and when they are a little over half worn, rip the seam in the middle and sew the edges together, which can be done in a half hour, and it will increase the wear of the apron at least one-third. I serve my sheets in the same way; of course the hems must be ripped a little way to admit of sewing it nicely at the ends, and then sewed down again the last thing. I usually cut the bindings of the aprons in two, and fix them as nicely as possible by ripping it a little way, moving the gathers so as to make the apron a little narrower, and turn the binding in and sew it firmly."

About Soups.

It is not easy to understand why soups are held in so little favor with Americans generally, while with most other people they form an important article of food. It is an economical disposition to make of pieces of meat not otherwise easily made useful, and even very cheap meat may be converted into palatable and wholesome food.

The French, from the richest to the poorest, have their *Pot au feu*, which literally would be "pot on the fire," but it is the name used to designate the universal soup. The directions for this vary; we give one of the most economical: Put in a pot, which is kept for this purpose alone, four and a half quarts of cold water and three pounds of rump beef, with whatever remains of poultry or cooked meat may be at hand. Put upon the fire until it boils, and then place where it will simmer gently, removing the scum as it rises; add two carrots, two turnips, two leeks or small onions, a head of celery, and three or four cloves. Let it simmer for six hours, adding water to supply the loss by evaporation. The whole story is meat and vegetables simmered slowly together, and it may be varied in many ways by using different vegetables, etc. The meat and vegetables are removed and the clear soup served, after which the meat and vegetables are served plain, or the meat is dressed with tomato or other sauce. Sometimes a tough fowl is put into the soup pot and cooked until tender, and then put into the oven and browned. The broth thus made serves for a variety of soups; with vermicelli, macaroni, rice or barley, it gives soups of those names. By using a variety of vegetables cut fine it makes vegetable soup. Roast an onion until it is thoroughly brown and boil it in the broth, and you have brown soup, or use a little of the following

Browning for Soups.—Many of the rich-looking soups owe their attractive appearance to burnt sugar, which is prepared as follows: Put three tablespoonfuls of brown sugar and an ounce of butter into a small frying pan and set over the fire; stir continually until it is of a bright brown color; add half a pint of water, boil and skim, and when cold bottle for use. Add to soups at discretion.

Ox-tail Soup is an exceedingly rich preparation, highly relished by most persons, especially in cold weather. Two ox-tails are cut in pieces at the joints, and with carrots, onions, turnips, pepper and salt, are slowly stewed in three quarts of water for three or four hours, or until the meat parts readily from the bone. A little thickening of flour is usually added. The flavoring is also varied by the use of cloves, catsup, etc.

Cold Cream or Rose Water Ointment is a most useful application, especially in winter, when chapped hands and cracked lips are prevalent. The best way is to buy it in small quantities of the apothecary, but in country towns it is seldom found fresh, and when rancid it is useless. It may be readily made in the family. The ingredients are one ounce of rose water, two ounces of oil of almonds (sweet), half an ounce of spermaceti, and a drachm of white wax. Of course a less quantity, but in the same proportion, may be used. Put the oil, spermaceti, and wax, in a bowl; set this in a vessel of water, and heat until the ingredients are all melted. Remove from the fire, and add the rose water in small quantities at a time, constantly stirring with a wooden knife whittled out for the purpose, until cool. It needs a great deal of stirring, and when properly made will be pure white and perfectly smooth. The addition of a small quantity of glycerine will make what is called "glycerine ointment,"—a very soothing application to burns and excoriated or inflamed surfaces.

Apple Sago Pudding.—By M. E. Elliott.—Core as many sour apples as can be placed in the bottom of a quart pan; fill the center of each apple full of sugar, add a little salt and one cup of sago; fill up the pan with water. To be eaten with sugar and cream (or milk) for sauce. Bake until the apples are done. An excellent pudding.

BOYS & GIRLS' COLUMNS.

A Happy New Year.

Many thousand kindly greetings have already reached us from the readers of these columns, while renewing their subscriptions for 1869. We here return them with compound interest, and tender to all the boys and girls, old and young, heartfelt wishes for their prosperity and happiness during the new year now commenced. It warms the hearts of the editors to look out in imagination upon the tens of thousands of faces that meet them with a smile as their monthly visits are made. Some of them are long-tried friends, who write that they have taken the *Agriculturist* the whole *twenty-seven* years during which it has been published, and that they have liked it all the time. Such testimony as this encourages us to continue to work faithfully in trying to interest and instruct. We do not make promises to excite your hopes and please our vanity, but address ourselves at once to performing what we can find to do for our mutual improvement. We cordially share the pleasure of the fortunate ones who are rejoicing in their holiday gifts, which speak of the affection and prosperity of their friends. But it will please us most to bring a smile to the face of some *poor* boy or girl, left to neglect, and perhaps suffering by the indifference, thoughtlessness, or avarice of others. Cheer up, little one. This is God's world, made for you, as much as for the richest and proudest man you know. Sunlight, air, health, strong muscles, opportunities to work, to grow stronger and better, and to make the world better, are all yours. *Work and Wait!* Take that for your motto, and your good time will come. All last summer, the bees worked through the sweltering heat, and now they are enjoying their feast; trees and plants worked to store up nourishment for future use; now they are stripped bare and stand desolate in the wintry storms, but they are only waiting; spring buds, summer blossoms, and autumn fruits, will remind you that winter cannot last forever. And you who need no such comforting assurances, who have never known the hardships of friendlessness and poverty, do your part to lighten the load and brighten the life of the less favored. Let your motto be *Help and Enjoy!* Thus all may realize a **HAPPY NEW YEAR!**

Premium Boys at the Fair.

The Ohio State Fair was a great exhibition. More useful and curious articles were gathered there than one could examine in several days. There were throngs of visitors, old and young, and it was as entertaining to watch them, as to look at the things brought on purpose to be shown. There were premium men and women, girls and boys there, although no prizes had been offered for such. Two of this class interested us more than any thing else we saw at the fair. They were boys about twelve years old, and were busy examining a long line of fodder cutters. Most of those present merely looked at these implements, and could have told that such things were on exhibition. But these boys went from one to another, and carefully looked into the working of each. One had too much machinery to suit them; another worked too slow; another was too hard to turn; each was criticised, commended, or condemned, as it seemed to them to have good or weak points. The sparkle of their knowing looking eyes, the healthy glow of their cheeks, and more than all, their intelligent conversation, marked them as 1st premium boys. We have little doubt that they are active members of the great *Agriculturist* family, and feel sure they will become thriving farmers.

The Lobster at Home.

A writer in a foreign paper thus pleasantly refers to the habits of this peculiar shell-fish:

"A lobster is a particular fellow in his food. I have been watching one in my marine aquarium. If a portion of food be thrown to him, he immediately sets his long horns at work to ascertain the whereabouts of his dinner. If he does not like it, he at once pushes it away from him with the attitude of an epicure, who bids the waiter take away a plate of meat he does not fancy. If the food is agreeable to him, he manches it up, moving his jaws in a peculiar way, like a weaver making a blanket. He tears his food into large pieces, leaving the actual grinding to be done by the very peculiar internal teeth which are found in the lining of the stomach. When the lobster goes out for a walk, and is not in a particular hurry, he carries his great claws in front of him, well away from the ground. He walks upon the little legs which are underneath his body, while he keeps his horns moving in front of his nose, like the blind man tapping the ground with his stick as he plods along, led by his dog; hence I conclude the lobster is short-sighted. If the least thing alarms him, he scuttles backward on his little legs, which move with the rapidity of a centipede. If he does not go fast enough in this way, he sud-

denly soaps his tail toward him, like a man suddenly closing his hand, and flies backward with a jerk, like an india-rubber band soaped in half. He always goes into his cave tail foremost, and he takes the most wonderfully good shots at the entrance. I really think the lobster must have an eye in his tail somewhere. Our pet lobster is not willing that the secret of his toilet should be exposed to vulgar gaze, so the first night he was in the tank he artfully collected cockle and oyster-shells, and made a trench around himself, after the fashion of the Romans who they took possession of a bill-top. A branch of sea-weed forms a canopy over his head, and there he is at this minute, in a house of his own making."

Agricultural Advice.—Punch advises farmers to sow their P's, keep their U's warm, hive their B's, shoot their J's, feed their N's, look after the potos I's, and we might add, they should C's every opportunity to improve, and then take their E's after work is over.

A Powerful Whistle.

Horace Mann used to tell a story of a conversation he once had with an inmate of the lunatic asylum at Worcester, Mass., whose peculiar mania resulted from an inordinate development of the hump of self-esteem. "What's the news? Has anything unusual happened of late, sir?" inquired he, with a consequential air. Mr. M. happening to recollect that a furious storm had occurred a few days previous, gave him some account of it, mentioning that on the sea-coast it was very severe, several vessels having been driven ashore and wrecked, with the loss of many lives. "Can you remember, sir, what night in the week all that happened?" eagerly inquired the listener. Mr. Mann said he believed it was the night of Tuesday. "Ah!" said the idiotic, with an air of solemnity, mingled with triumph, and lowering his voice to a whisper, "I can account for it, sir! That is the night I whistled so. I must be more careful in the future!"

A man living in the activities of the nineteenth century may properly be called a condensed Methusalem.

Young Punster.—A friend recently heard two boys wishing aloud for what they saw over the fence in a neighboring yard. "I'd like to have that hen," said one little fellow. "I'd take that dog," said the other. "That would be first-rate," replied the first speaker. "My hen could lay eggs, and your dog could lay down!"

New Puzzles to be Answered.

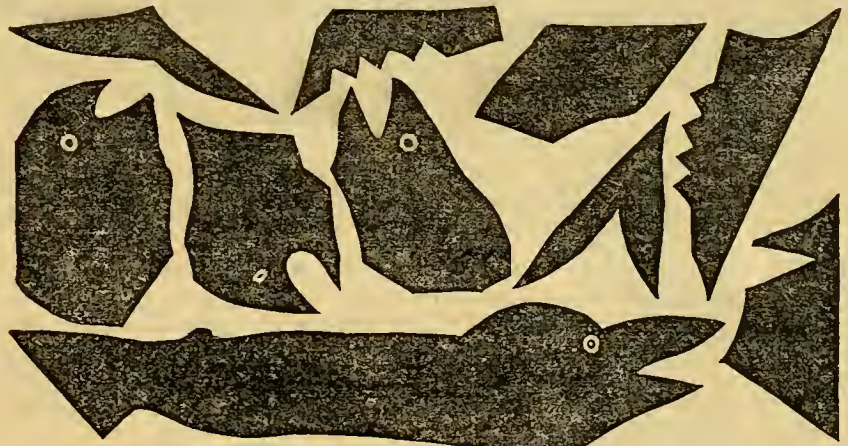


No. 335. *Illustrated Rebus.*—A desirable accomplishment.

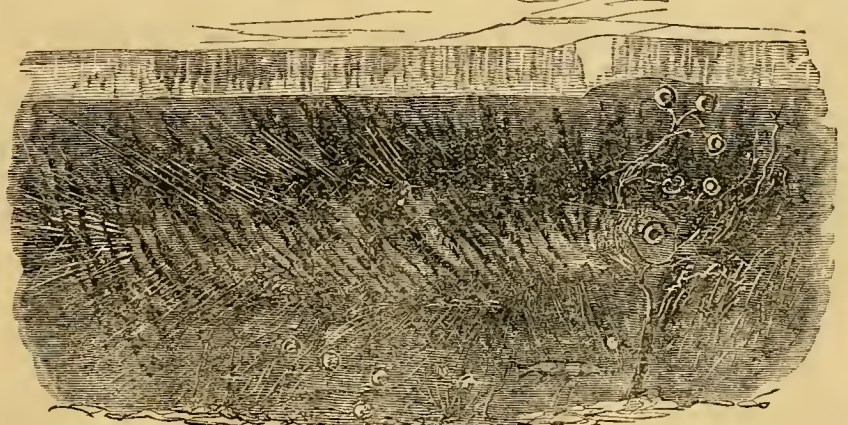
No. 336. *Mathematical Problem.*—A certain number divided by 10 leaves 9 for a remainder; divide by 9 and 8 remains; divide by 8 and 7 is left, and so on; dividing by each of the nine digits, the remainder in each case will be one less than the divisor; if the number be divided by 11 there will be no remainder. What is it?

Answers to Problems and Puzzles.

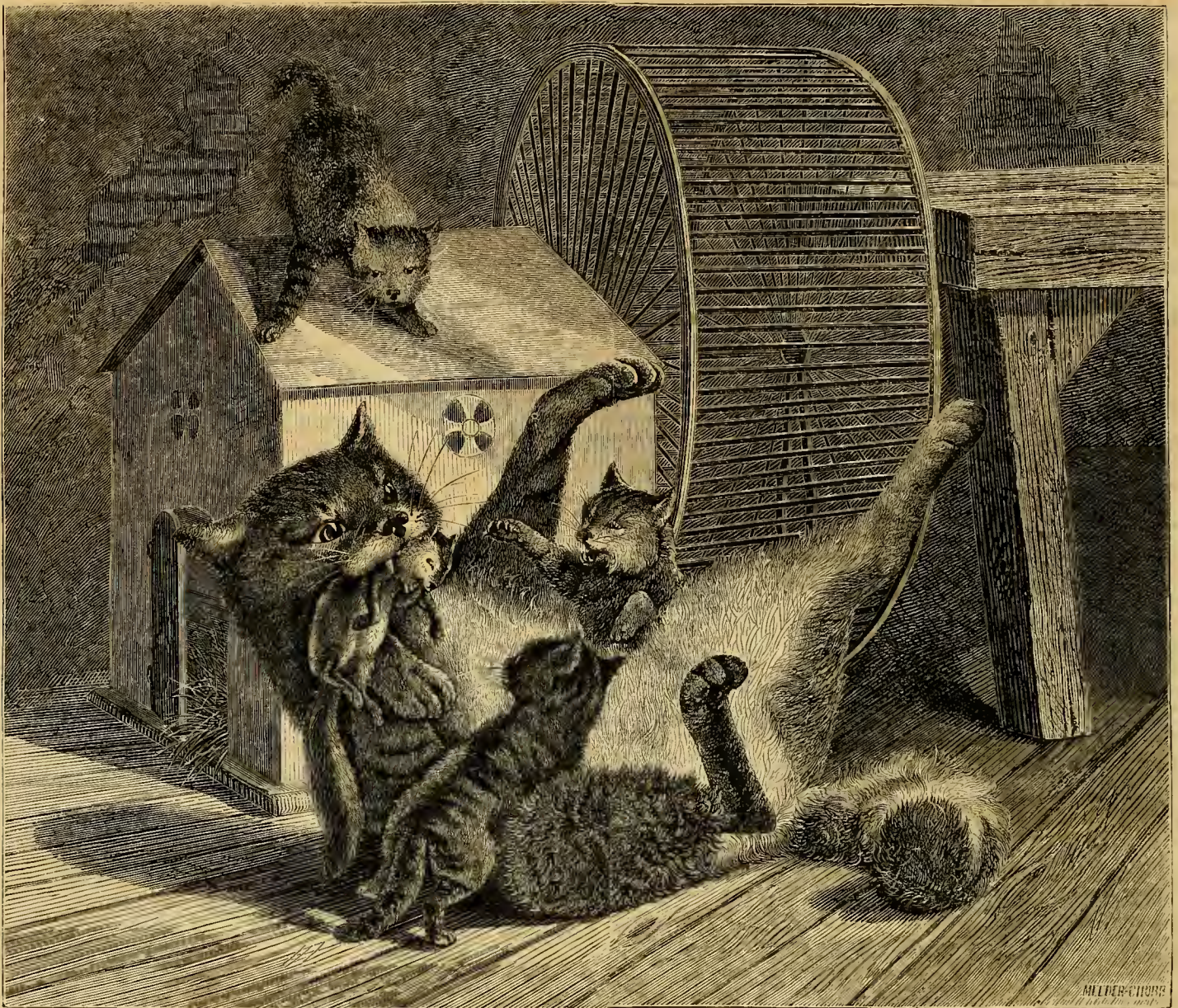
The following are answers to the puzzles, etc., in the December number, page 459. . . . No. 332. *Illustrated Rebus.*—Aching teeth are ill tenants. (*A king t hare rill X ants.*) . . . No. 333. *Illustrated Rebus.*—No one too wise to learn. (*No 1 2 yj's stool urn.*) The following have sent in correct answers to puzzles previously published. Salina E. Sanborn, Frank L. Whitecomb, O. O. Brown, Isaac T. McLain, John Milton Snyder, James Polk Harmony, Wetunka, Mosheim Weills, John Lehdes, E. Leonard, Marius Heighton, Emma Waterman, Jackson Brown, A. E. Lewis, Nellie C., O. R. Goodale, "Crescent and Star," W. Wettit, John E. Holmes, Mrs. Rebecca Rickel, Robert Simpson, Eva Gray, Frank L. Smith, Hattie E. Hawley, S. F. Higley, Mira A. Lick, Thomas Wellhogs.



No. 334. *A Puzzle for Fishermen.*—The first picture shows the bait, which is to be cut into pieces, as shown by the lines. Then by fishing with them in the pond shown in the second engraving, you may catch a fine



pickarel. It will require skillful angling to accomplish it. Instead of cutting the pieces out of the paper, which would spoil a number, lay a thin piece of white paper upon the engraving, trace the outlines, and cut them up for bait.



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A TREACHEROUS FRIEND.—*Drawn and Engraved for the American Agriculturist.*

Few pets are more attractive at first sight than a cat and kittens, so tame, playful, and affectionate. But the picture shows the other side of cat nature, sly, murderous, and cruel. The poor squirrel, lately so full of life and frolic, has fallen a victim to the ferocity of the cat, and the whole family are in high glee over the poor mutilated body. This can scarcely be wondered at when we know that the cat is first consin to the lion, tiger, and leopard, and when wild is itself a most ferocious creature. Its habits are much changed by domestication, but the cat nature remains, ready to show itself on every favorable occasion. The lesson of the picture is very plain: do not keep cats and squirrels together, and be as wise in keeping innocent children away from smooth, purring, cat-like, vicious companions, who will kill with a smile.

Eight Acres of Music.

Not long since a musical gentleman of our acquaintance purchased a small piano of the kind offered in our premium list. His house is situated in about the middle of an enclosure of eight acres, and by listening in different parts of the field he found that he could distinctly hear the notes of the instrument when played on, from every part of the premises. Our young philosophers know that sound is caused by vibrations communicated to the air from a sonorous body, and conveyed to the ear, passing thence through the auditory nerve to the brain. Here, then, was the air over eight acres in extent, all tremulous when a single note was struck, the whole caused by the vibration of a wire less than three feet long. It is a pleasant thought that one can thus make acres of music. Without doubt all the fine notes of dust floating in the air felt the influence, and were set to dancing after their own fashion, to the music of the piano. We have wit-

nessed something even more wonderful than this. A pleasant thought given out by some warm-hearted writer and sent vibrating through the land by the press has brought music to tens of thousands of hearts. Play on the pleasant strings, boys and girls, and let there be a continued and happy chorus ringing through the land.

Good Places for Boys.

Dear Sir:—I would like very much to get a place as clerk in New York. I am sixteen years old, and have always lived on a farm. I understand arithmetic pretty well, and think I could give good satisfaction in a store. If you can help me get a place, it will be doing me a great favor.

Yours respectfully,

Many such letters are received here every year. We have not time to answer each one personally, and as the matter is an important one to many young readers, we give the following general answer. First, to follow the Yankee way of answering one question by asking another. Why do you wish to leave the farm and come to New York? The answer in most cases is, "It's easier than working on a farm." Perhaps so. It is easier in one sense to be good for nothing than to be valuable to yourself and others; it takes much less work—simply do nothing, and be nobody, is the rule. But the question to be looked at is, Will it pay to have an easy time and get little in return? Those who succeed in the city must do it by hard work. Many a rich merchant in New York performs more real labor in a day and is more exhausted than the hardest worked laborer on a farm. He does not exert his muscles as much, but his brain, which is the seat of power, is intensely active, and he wears out fast. Those who "take things easy" in the city get the same small return as the loungers in the country; so nothing will be gained in that respect. "But," say, or rather

think, many boys, "they have such nice things in New York; shows, museums, circuses, and something going on all the time." Yes, there are thousands of ways for spending money for amusement here, all of which bring no profit, and what is worse, too many of them are surrounded with danger. Thousands of the young are every year amused by the shows and ruined by their corrupt surroundings, for the drinking saloon and the gambling rooms are close by the principal places of amusement, and every temptation to enter them is held out. But furthermore, there are thousands of boys and young men born here, accustomed to city life, who stand ready to fill all the desirable places. They usually have the best opportunities, having acquaintances and friends to help them, so that a boy from the country applies for a place under great disadvantages. A single advertisement for a boy by a friend of ours was recently answered by more than two hundred applicants. It is true that a few, perhaps one out of a hundred, who come to this city, succeed by long self-denial and hard work in gaining an independence, but it is not certain that even these are better off than they would have been to have used the same energy and worked their way up in the country. Work, patience, perseverance, honesty, brains, and energy, will win anywhere, and the farm where you have already made a beginning is equal to any other place for working out the problem of life.

A Spendthrift was advised by a friend to buy a neglected farm. "Why," replied the former, "there's not a passable road through the whole of it." "That is the very reason you should get it," replied his friend; "it will take you longer to run through it."

Some do first, think afterwards, and repent forever.

OUR YOUNG FOLKS FOR 1869.

The Conductors of "OUR YOUNG FOLKS" intend to preserve the high literary character of the Magazine, and at the same time to give it a more *comprehensive and practical* cast than heretofore. They feel confident that the arrangements they have made for the coming year will answer all reasonable demands of parents for a Magazine at once entertaining and useful.

The following are some of the principal features of the coming volume.

The Story of a Bad Boy. By T. B. ALDRICH. One of the brightest and most entertaining stories ever written for youthful readers.

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Glass-Making, Coal-Mining, Ship-Building, Watch-Making, and other attractive branches of Industry. By J. T. TROWBRIDGE.

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THE PICTURE'S STORY.

[SPECIMEN OF THE ILLUSTRATIONS IN "OUR YOUNG FOLKS."]

WHAT THE READERS OF "OUR YOUNG FOLKS" THINK OF IT.

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FOLKS, but I can't do it. I am lame and cannot go off and play with the other boys, so I must have my old friend again."

UTICA, N. Y., Dec. 7, 1868.
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Greeley's History of the War.

Mr. GREELEY purposes to write, during the year 1869, an elementary work on Political Economy, wherein the policy of Protection to Home Industry will be explained and vindicated. This work will first be given to the public through successive issues of THE NEW-YORK TRIBUNE, and will appear in all its editions—DAILY, SEMI-WEEKLY, and WEEKLY. The work will contain the best results of the observations and study of a lifetime, and, as the question of Protection to American Industry concerns our entire people, it will be looked for with great interest. In addition to this work by Mr. Greeley, THE TRIBUNE has engaged George Geddes, one of the best and most successful farmers in the country, and other able writers on Agricultural subjects, to write regularly for its columns. The American Institute Farmers Club will continue to be reported in THE SEMI-WEEKLY and WEEKLY TRIBUNE. No farmer who desires to till the soil with profit, and to know the progress constantly made in the science of his calling, can afford to neglect the advantages of a newspaper like THE WEEKLY TRIBUNE, especially when it unites with agriculture other features of interest and profit. THE WEEKLY TRIBUNE contains a summary of all that appears in THE DAILY and SEMI-WEEKLY editions, while in addition it is made to address itself to the wants of the great farming class. Reviews of new publications, and of what is new in music and the fine arts; letters from different parts of the world—some of them of rare interest to the farmer, as showing the progress of agriculture in other countries; editorial essays on all topics of home and foreign interest, together with full and carefully printed reports of the markets, will be furnished from week to week, and at a lower price than that of any other newspaper in America. By pursuing this policy THE WEEKLY TRIBUNE has attained its present commanding influence and circulation, and we enter upon the new year with an assurance to our readers that no pains and no expense will be spared to give it still greater usefulness and power, and to make it a yet more welcome visitor to every fireside in the land.

GREELEY'S HISTORY OF THE WAR.

THE TRIBUNE also proposes to send "The American Conflict," by Horace Greeley, in 2 Vols. of 648 and 732 pages respectively, to clubs on terms stated below. This history has received from all quarters the highest commendations for accuracy of statement and fullness of detail. It is substantially bound, and must be deemed a valuable addition to any library. These volumes should be placed in every School District library to the land, and each school contains scholars who can, with a few hours of attention, raise a Tribune Club and secure the history. Almost any one who wishes can now obtain it by giving a few hours to procuring subscriptions for THE TRIBUNE among his friends and neighbors, and we hope many will be incited to do so. The work will be promptly forwarded, prepaid, by express or by mail, on receipt of the required subscriptions.

TERMS OF THE TRIBUNE.

DAILY TRIBUNE, Mail Subscribers, \$10 per annum.

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Mail Subscribers, \$2 per annum; 5 copies, \$9; 11 copies, to one address, \$15; 10 copies and Greeley's History, to one address, \$20; 21 copies, to one address, \$25; 20 copies and the History, to one address, \$31; 59 copies, to one address, \$50; 50 copies and the History, to one address, \$56; 11 copies, to names of subscribers, \$16; 10 copies, to names, with one copy of the History, \$21; 21 copies, to names, \$27; 20 copies, to names, with one copy of History, \$33; 50 copies, to names, \$35; 50 copies, to names, with one copy of History, \$61.

The money must, in all cases, be received at one time, and the papers be sent to one Post-Office.

Friends wishing to secure the History on these terms must send the Clubs precisely as we have stated them. SEMI-WEEKLY and WEEKLY subscriptions must not be mixed in one Club.

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THE TRIBUNE,
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NEW CRIMSON CLUSTER TOMATO,

25 Cents per Packet, \$15 per 100.

(For description see our Seed Catalogue for 1869.)

Our Illustrated Catalogue of SEEDS and IMPLEMENTS, also that of NEW and RARE PLANTS, is now ready, both of which will be mailed on receipt of 25 Cents.

To our Customers of last season they will be mailed, as usual, without charge.

HENDERSON & FLEMING,

Seedsman, Market Gardeners, and Florists,
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Gardens at BERGEN CITY, N. J.

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Early, Productive, Tender, Creamy and Delicious.

Testimony.—Solon Robinson says: "After years of trial, I still express the same opinion I did at first: that is, that your sweet corn is the best variety, all things considered, that I have ever grown."

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This corn is the result of eight years' search and trial of more than forty varieties. I propose to make seed corn a specialty, and will gladly pay \$50 for a single ear of a better kind. Package of seed by mail sufficient for fifty hills, 50 cents. JAS. B. OLCOTT, Buckland, Conn.

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But a Cabbage such as every gardener likes to grow, and every housekeeper to use. Sold, of fine texture, small-ribbed, short-stemmed, and good size; such are the varieties we offer of our own growth. Warranted fresh and genuine.

Dreer's Philadelphia Drumhead Cabbage 50 cts. per oz., \$5 per lb. Dreer's Philadelphia Flat Dutch Cabbage 50 cts. per oz., \$5 per lb. The Flat Dutch is about one week earlier than the Drumhead.

No charge for mailing. For a full list of genuine Seeds, see Dreer's Garden Calendar for 1869.

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THE AMERICAN HOUSEWIFE.—Agent wanted.—Just the paper for the family. It contains hints for housekeepers, choice literature, fashion, etiquette, and fancy work. Illustrated floral and children's departments. Terms, one copy, one year, \$1.50. Specimens free. Address Mrs. M. M. B. GOODWIN, Monitor Office, Indianapolis, Ind.

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C. O. D.—READER, if you want to buy a WALTHAM WATCH, in solid Gold and Silver cases only, procure circular (sent free) of M. E. CHAPMAN & CO., No. 47 Liberty-st., New York. They sell the genuine cheaper than any other dealers.

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KING OF THE TOMATOES.—A new and superior variety of this valuable esculent, combining more good qualities than any other variety in cultivation. Plant, strong and vigorous; fruit above medium size; grows in clusters; form round, somewhat flattened at the ends, seldom creased or wrinkled; color a deep, rich red, very showy and attractive in appearance; flesh very solid, with but few seeds, of fine flavor; very productive, ripens with the Tilden. Its great beauty and remarkable keeping properties make it a most desirable market variety, while its solidity and agreeable flavor make it equally desirable for canning. Price 25 cts. per packet; 5 packets for \$1.

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The most valuable WHITE Grape grown, 1, 2, and 3-year-old Vines of superior quality at greatly reduced prices.

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THE Subscriber desires to make an arrangement with a young farmer with family, for the prosecution of the business of farming. A. B. HUMPHREY, Albany, N. Y.

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At Two Dollars each, or for EIGHT SUBSCRIBERS to the SEMI-WEEKLY EVENING POST, At Four Dollars each.

The Clocks which we thus offer as a premium were first placed in the market some years since, by the **AMERICAN CLOCK COMPANY** of this City and have won general approval for their accuracy as time-keepers, as well as their elegance of form, which makes such a clock an ornament fit for any parlor mantel-piece, and in beauty of design and fineness of finish they are equal to the French Clocks. The movements are made upon the French plan, have steel plinions, are finely polished, and dealers admit that they will run more surely and correctly than the French; while they have the qualities which have always made the French clocks desirable, of noiseless ticking, and a pleasant, clear-toned bell, striking the hours and half-hours. Many thousands of these clocks have been manufactured, and the demand keeps pace with the supply. The liberality of our offer will be appreciated when it is considered that these clocks cannot be bought at the stores throughout the country for less than **TWENTY-FIVE DOLLARS**; so that, as the regular subscription price for 15 copies of the **WEEKLY POST** is \$30, or \$32 for eight copies of the **SEMI-WEEKLY**, the clock or the paper is nearly an

ABSOLUTE GIFT

In order that all may be encouraged to make the attempt to procure this desirable Household Article, we shall allow, in the event of persons not being able to procure the requisite number of names, a commission of *Twenty-five Cents* for each subscription to our **WEEKLY**, or *Fifty Cents* for each subscription to our **SEMI-WEEKLY**, so that all may be rewarded for their effort, "it being understood that in every case the money must accompany the names." The clocks will be carefully packed and sent by Express to any address; and we have made arrangements with the Express Companies, which will cause their being forwarded at a much less cost to the receiver than their ordinary charges.

The appropriateness of our premium as a

HOLIDAY GIFT,

will be apparent, and doubtless we shall be the medium of many pleasant surprises.

The proprietors of the **EVENING POST** desire to add largely to the circulation of the **WEEKLY** and **SEMI-WEEKLY** editions of their journals; believing that the care with which these papers are made up, the unusual variety of their contents, their high literary character, fullness of news, both foreign and domestic, and interesting special features, contribute to make either the **WEEKLY** or **SEMI-WEEKLY EVENING POST** the best family journal in America.

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My Three Warrants!

1st.—I insure all the seed I send out to be as represented
2d.—I insure all seed ordered shall reach my customers.
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The most economical Crate and Basket in use. Neat, strong, compact, and well ventilated.
Agents wanted in all the fruit-growing districts.
Orders for Western New-York direct to S. D. REDMAN, Box and Basket Co., Newfane, N. Y. CIRCULARS SENT FREE.

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Not to be paid for until tried on your own farm and found satisfactory, for cutting turnips, beets, carrots or potatoes, fine or coarse, suitable for cattle, horses, or sheep. Cost at your nearest railroad station \$13 for No. 1, and \$17 for No. 2. Cuts a bushel in from one to two minutes when turned by a boy. Dealers supplied. Send for Circulars to J. H. DECATUR & CO., 187 Water-st., New York, or GEORGE E. HUTCHINSON, 83 Merwin-st., Cleveland, Ohio.

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KNIFE GRINDER for Mowing Machines.—Sanford's Patent. It is light, and can be taken to the field for use. A boy can grind the knives accurately in 15 minutes, without injury to the knife, and with safety. It is a labor-saver. Price \$10.50. Send for Circular. Address JOHN W. QUINCY, 93 William-st., New York City. Rights for sale.

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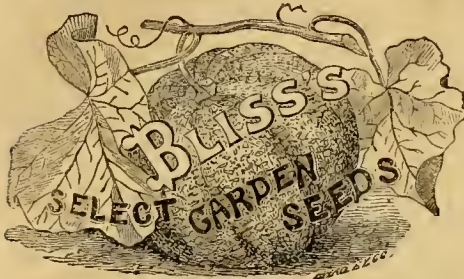
A new work on **MARKET AND FAMILY GARDENING**. It is finely illustrated, and is the first book of the kind prepared by a Market Gardener, in this country. The author is well known, and his successful experience of eighteen years, enables him to give a most valuable record. It is an *original and purely American work*, and not made up, as books on gardening too often are, by quotations from foreign authors. Everything is made perfectly plain, and the subject treated in all its details, from the selection of the soil to preparing the products for market. By PETER HENDERSON. Cloth, 12mo 252 pp.

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Horticultural Implements and Garden Requisites.

Would invite the attention of all who are interested in the culture of Flowers and Vegetables, to their large and well-selected assortment of the above, comprising the newest and most approved varieties, both of European and home production, the quality and utility of which cannot be surpassed. For a list of these see their

NEW ILLUSTRATED SEED CATALOGUE,

AND

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The Fifteenth Annual Edition, enlarged and improved, contains 132 pages of closely printed matter, beautifully illustrated with 100 Engravings, and a descriptive list of 2,500 varieties of Flower, Vegetable and Agricultural Seeds, including all the novelties of the past season, with explicit directions for their culture; also, a list of 125 varieties of French Hybrid Gladiolus, embracing many new sorts now offered for the first time in this country—with many other Summer Flowering Bulbs, consisting of Anemones, Tuberoses, Tigridius, Lilies, etc.; with much other useful information upon the subject of gardening generally, will be published early in January. A copy will be mailed to all applicants upon receipt of 25 Cents. Our regular customers supplied without charge.

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Contains 68 pages of closely printed matter, embracing a Monthly Calendar of operations, and a priced list of the leading varieties of Garden, Field and Flower Seeds, with brief directions for their cultivation. A copy will be mailed to all applicants enclosing a three cent stamp.

B. K. BLISS & SON, Box 512 P. O. 41 Park Row, and 151 Nassau-st., New York.

One Hundred Dollar Prize

For an Essay on the Potato and its Cultivation, to be called

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I offer \$100 as a prize for the best essay on the cultivation of the potato. The manuscript must be sent in to B. K. Bliss & Son, 41 Park Row, N. Y. City, by or before July 1st, 1869. Each writer must enclose his name and address in a separate sealed envelope, placing a mark upon the envelope like one on the manuscript.

Authors should save copies of their essays and have them plainly written. The successful competitor will be announced and the essay published by J. Ferguson & Co., New Castle, Pa. and B. K. Bliss & Son.

The decision will be made by a committee consisting of Col. M. C. Weld, of the American Agriculturist, A. S. Fuller, of Ridgewood, N. J., and Editor of the New York Sun, and Dr. F. M. Hexamer. For other information, address (Rev.) W. T. WYLIE, New Castle, Pa.

FRESH GARDEN SEEDS.

We offer at following low rates by express; when wanted by mail, post-paid, add 20c. per quart. Early Mohawk, Early China, Early Valentine, Early Yellow, Six Weeks and Heinze Beans, and Dan O'Rourke Early, Blue Imperial and Champion of England Peas, at 25c. per quart. Black Wax (Bush) and Indian Chief (Wax), and Horticultural, Pole Beans, at 40c. per quart. Large Lima and Concord, pole beans, Carter's First Crop, Advance, Little Gem and Tom Thumb Peas, at 60 cts. per quart. Giant Wax Pole Bean, \$1.50 per quart. Very fine named French and Belgian Hybrid Gladiolus, \$1.50 per doz. For other Seeds and Plants, see our new Catalogue, ready about the 15th. In addition to premiums offered in Dec. No. 6, American Agriculturist, we also offer handsome premiums for largest yield of Early Rose Potato and Norway Oats, from packages ordered before March 1st.

Beans, Peas and Potatoes, the best varieties, warranted genuine, by peck, half bushel and barrel, at lower rates than generally offered. Purchasers of seeds in large or small quantities will save their money by inclosing one stamp for our Catalogue.

For three dollars we will send three dollars' worth of seed in packets and 1 lb. of Early Rose Potato free. WARDWELL & CO., West Dreston, Yates Co., N. Y.

NORWAY OATS.

Send orders to headquarters. Every acre sown in this seed will pay a profit of several hundred dollars next year. Farmers should consider this before it is too late. Price \$10 per bushel; \$6 half bushel; \$4 per peck; or by mail, \$2 two quarts; \$1.25 one quart, post-paid.

JONES & CLARK, 39 Liberty-st., New York.

P. O. Box. 5669.

New and Choice Potatoes.

CLIMAX.

The CLIMAX is a seedling of the Early Goodrich, and originated with Mr. D. S. Hoffman, in 1861, and is thus described by him:

"It has a stout, erect stalk, large leaves, a tuber about medium size, smooth, cylindrical form, swelled out at center, eyes, shallow, but strongly defined; skin considerably netted or russet, tough, white; flesh entirely white, solid, heavy, brittle, and never hollow; boils through quickly, with no hard core at center, is mealy, of floury whiteness, and of superior table quality. It is equally productive with the Early Rose, but a few days later, earlier than the Early Goodrich, while its keeping qualities are as good as the Peachblows."

We have made arrangements with Mr. Hoffman for a portion of his stock, which we offer to our patrons, fully confident of its good quality. Price \$3.00 per pound, by mail, post-paid.

BREEZE'S PROLIFIC (or No. 2).

This remarkable variety originated with Albert Breeze, Esq., of Hubbardton, Vermont, who was also the originator of the justly celebrated Early Rose, both varieties being produced from the same Seed-ball of the Garnet Chili.

The vines of Breeze's Prolific are of medium height, quite bushy, somewhat spreading, large leaves, have produced no seed-balls. Tubers large, regular in shape, and very smooth, slightly oblong, somewhat flattened. Skin dull white, inclined to be russeted; eyes but little depressed and slightly pinkish, flesh white; cooks quickly, is very mealy, and of excellent quality, yield very large, often exceeding One Hundred fold, matures about three weeks later than the Early Rose, and will prove a most valuable variety for field culture. A silver medal was awarded to this variety at the annual exhibition of the Mass. Hort. Society, last September. Price \$3.00 per pound by mail, post-paid.

EARLY ROSE.

Among the many thousands of our patrons to whom we furnished this valuable Potato last spring, we have yet to hear from the first one who is not fully satisfied with his purchase. The only regret expressed is that they had not purchased more. We are daily in receipt of the most flattering testimonials, not only of its earliness and good quality, but of its astonishing productiveness, some of which seem almost fabulous. Several reports of having grown a barrel from a single pound; a yield of one hundred fold is an every-day occurrence. The following well-known gentlemen have given their unqualified approval, and endorse it as the best, most productive, and earliest variety in cultivation: Hon. Marshall P. Wilder, Chas. Downing, Esq., Rev. Henry Ward Beecher, Fearful Barr, Esq., Dr. J. G. Holland, (Timothy Hitchcock), and many other prominent agriculturists, horticulturists, and market gardeners. We shall continue to execute cash orders through the month of January at the following prices:

One pound, \$1.00; Three pounds, \$2.00, by mail, postpaid. One peck, (15 lbs.), \$5.00; 1/2 bushel, \$8.00; 1 bushel, (60 lbs.), \$15.00; 1 hbl., (165 lbs.) \$30.00. Prices to the trade, in larger quantities, will be given upon application. The freight on all packages by express, boat, or railroad, to be paid by the purchaser. No charge for packages or cartage.

Upon receipt of \$5.00 we will mail, post-paid, to any address in the United States or British Provinces, ONE POUND each of the CLIMAX, BREEZE'S PROLIFIC, and the EARLY ROSE. Orders will be booked in the order in which they are received, and the potatoes forwarded on and after April first, when they will be free from danger of frost. They can be forwarded earlier if desired, at the risk of the purchaser. No orders will be accepted unless accompanied with the cash.

In addition to the above, we have a large stock of EARLY SEED, EARLY GOODRICH, YANDEBERG'S SEEDLING, JACKSON WHITE, HARRISON, &c., &c., which we offer at the lowest market prices.

Our descriptive priced list of potatoes mailed to all applicants.

A new and valuable work on the Potato and its Culture, with illustrations of several new varieties, by Rev. W. T. Wylie, of New York, Pa., just published, and mailed to all applicants upon receipt of 20 cts.

B. K. BLISS & SON,

41 Park Row and 151 Nassau-st., New York. (P. O. Box 5712.) Formerly of Springfield, Mass.



Dreer's Garden Calendar for 1869

Contains directions for the cultivation of Vegetables and Flowers,

With Descriptive Lists of Seeds, New Varieties. Prices in large or small quantities with lists of

Choice and New Bedding Plants;

Roses, Verbenas, Dahlias, Fuchsias, Gladiolus, etc., etc.

132 pages, beautifully illustrated, will be mailed to all who enclose a 3-cent stamp to his address.

Dreer's Wholesale Price List of Seeds, etc.

For Dealers only, will be mailed on application.

Address HENRY A DREER, 714 Chestnut-street, Philadelphia.

To Florists and Amateurs.

Roses of the leading varieties, \$2.00 to \$6.00 per dozen. Verbenas, stock plants, 25 best varieties, \$5.00. Dahlias, Bouquet, Bedding and Fancy varieties, strong pot roots, \$3.00 per doz., \$3.00 per 100. Pollock Geraniums, strong plants, 50 cents each, \$5.00 per dozen. Cannas, 12 finest varieties, \$3.00 to \$5.00 per dozen. Begonias, 25 varieties, 50 cents each, \$5.00 per dozen. Maclava Yeddoensis, fine, new, hardy, ornamental leaved plant, 50 cents to \$1.00 each.

OLM BROTHERS, Successors to B. K. Bliss, Springfield, Mass.

AMATEUR CULTIVATOR'S GUIDE

TO THE

KITCHEN AND FLOWER GARDEN.

THE TWENTY-THIRD EDITION of this popular and useful work, which has met with so great favor in the past, will be ready Jan. 15, much enlarged and improved, containing descriptive lists of all Flower and Garden Seeds worthy of cultivation, embracing over twenty-five hundred varieties; to which is added all the novelties in Flowers and Vegetables for 1869, also two hundred varieties of the choicest French Hybrid Gladiolus.

The following testimonials are unsolicited by us, and can be multiplied by hundreds:—

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"Accept many thanks for the beautiful copy of your Annual Catalogue which you so kindly send me. I find much that is new and rare therein. The arrangement, the concisely cultural instructions, copious illustrations, and clear typographical execution, all combine to make it a model catalogue. I shall often have occasion to refer to it. It cannot fail to be of great use and interest to all horticulturists."

From Joseph Hobbins, M.D., Madison, Wis., President Wisconsin State Horticultural Society, and Corresponding Member of the Royal Horticultural Society of England.

"Please accept my thanks for your 'Guide.' I think you ought to call it 'The Garden Companion.' It is at once very usefully and conveniently arranged; a sort of ready-reference book, very ornamentally got up; one of those few books I find fitted for any table; often wanted, and always at hand."

From Andrew S. Fuller, Horticultural Editor of the "New York Sun."

"There is no use in denying the fact that Washburn's Catalogue is the handsomest thing of the kind ever got up in this country."

From the "Banner of Light," March 7, 1868.

"It is a perfect repository of suggestions of very great value to those who are addicted to gardening and its numerous delightful associations. The profuseness of the illustrations greatly increases its value as a guide to the amateur."

The above work comprises 150 pages. Tastefully bound in cloth, with two beautiful Colored Plates,—one steel,—besides one hundred other Engravings. Price 50 cents, post-paid. Paper Cover, one Colored Plate, one hundred Engravings, post-paid, 25 cents. Address

WASHBURN & CO., Horticultural Hall, Boston, Mass.

CURTIS & COBB'S

Illustrated Annual Catalogue FOR THE SEASON OF 1869.

We shall be early prepared to offer, as usual, very choice Seeds of every description. As the crops abroad, owing to the dry weather last summer, were very short, some varieties will be scarce. We hope, however, to be well supplied, but still would impress upon our patrons the importance of ordering early.

Our New Catalogue will contain a list of those very fine French and German Flower Seeds, which, as sold by us, as imported, in the original packages, have given such great satisfaction.

We shall offer in due season, many New Varieties of Vegetable and Flower Seeds, of undoubted excellence, as well as a very large lot of New French Hybrid Gladiolus, many of which were the admiration of the public as exhibited by us at the annual exhibition of the Massachusetts Horticultural Society last autumn. To amateurs and others ordering in quantity, special inducements will be offered.

Novelties and Specialties of the season will be found in our New Kitchen and Flower Garden Directory, of 150 pages, beautifully illustrated, with price of each article, and explicit directions for cultivation, which will be forwarded early in January to our patrons, free, and to all others on receipt of ten cents. Do not forget to address, early, CURTIS & COBB, Seedsmen, &c., 318 Washington-st., Boston, Mass.

Pear Seeds and all Fruit and Tree, FLOWER AND GARDEN SEEDS, by the paper, oz., lb., or cwt. Seeds on Commission. Trade List and General Catalogue to any address gratis, ready. B. M. WATSON, Plymouth, Mass.

CATALOGUES FREE! M. O'KEEFE, SON & CO'S Catalogue of Seeds,

And Guide to the Flower and Vegetable Garden for 1869.

(Published in January.) Every lover of flowers wishing this new work, free of charge, should address immediately M. O'KEEFE, SON & CO, Ellwanger & Barry's Block, Rochester, N. Y.

The Unrivalled Prize Tomato.
GENERAL GRANT.

We take great pleasure in announcing to the public that we have secured the entire stock of this justly celebrated Tomato. It originated in the garden of an Amateur, who, after growing it for a number of years in connection with all the leading sorts, became convinced that it was far superior to any other, and that it should be widely disseminated, and for this purpose it was put into our hands. In consideration of the many disappointments experienced in the introduction of new varieties, we have given it a thorough trial of two years, and it has far exceeded our expectations, ever attracting great attention wherever exhibited, taking the first prize above all others at the Mass. Horticultural Society Exhibitions the past two years. We feel the fullest confidence that too much cannot be said in its praise. We believe it the nearest approach to perfection of anything of the kind yet offered, combining more superior qualities. Size above the medium, three to four inches in diameter, growing in clusters, form round, slightly flattened, very regular, symmetrical, and rarely ribbed or wrinkled, color brilliant, glossy crimson, flesh unusually firm, solid, and free from water, weighing from ten to twenty pounds more per bushel than any other variety, skin remarkably fine, smooth, and shining, coloring well up to the stem, a quality very desirable to those preparing them for the table, very productive, and of the finest flavor, bears carriage well, and keeps in good condition a long time after being gathered, retaining its goodness, and free from wilting; it will be found to ripen uniformly, and as early, if not earlier than the other varieties. Our whole stock of seed has been grown for us by Mr. C. N. Brackett, Chairman of the Vegetable Committee of the Mass. Hort. Society, and saved only from the most perfect fruit, and we are warranted in saying that it cannot fail to give satisfaction in every instance.

We offer the following testimonials from practical parties, gentlemen whose judgment in such matters is fully reliable; for further testimonials and description see Amateur Cultivators' Guide.

From Andrew S. Fuller, Author of Small Fruit Culturist. "We have had an opportunity of testing this tomato the past season, and believe it will prove to be one of the very best varieties in cultivation."

From J. F. C. Hyde, Pres't. of Mass. Hort. Society. "I have known the General Grant Tomato for two years, and last season raised a few tomatoes of this variety. I think it is the smoothest, and every way the handsomest variety I have ever seen. It is quite solid, equal in this respect to any other variety. I have regarded it as a great acquisition to our list of tomatoes."

From C. Bates, of Kingston, originator of Bates' Early Tomato. "The General Grant Tomato I have tried with several other varieties, viz.: Cedar Hill, Ford, Tilden, Keyes', Bates' Early. The General Grant beat all in earliness except Bates' Early; with that it was about "neck and neck." But for beauty of form, color, and compact flesh, it stands head and shoulders above all the rest. Planted the 15th of May, fruit ripe 6th of August."

CAUTION.

On account of the immense popularity of this variety we find that parties are offering for sale a spurious seed, desiring to obtain large prices for the common sorts. We would therefore recommend parties purchasing to take only those sealed in paper packets bearing our name, as none other can be genuine.

Price per packet, 25 cts.; 5 packets, \$1.00.

Prices to the trade on application.

WASHBURN & CO.,
Hort. Hall, Boston, Mass.

Vegetable and Farm Seeds.

Our Annual Descriptive Priced Catalogue of Kitchen Garden Seeds, &c., for 1869, is ready for mailing to applicants.

J. N. THORBURN & CO.,
15 John-st., New York.

New and Rare Vegetables.

Having been the original introducer of the Hubbard Squash, Marbled Mammoth Cabbage and many other new things, I still continue to make the raising of the seed of new and rare vegetables a specialty, in addition to the standard kinds. Catalogues gratis to all.

JAMES J. H. GREGORY, Marblehead, Mass.

500,000 First-class APPLE STOCKS.—Every one wishing to start a Nursery should send at once and get our trade list. We have many things you want. JOHN WAMPLER, Trotwood, Montgomery Co., Ohio.

ONE HUNDRED ACRES ENOUGH, of Raspberries and Blackberries, the fruit of which brought \$1 per quart in market. Send stamp for Catalogues.
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DAVISON'S THORNLESS Raspberry Plants.—For sale by the piece, dozen, hundred or thousand. For particulars address JOHN GAGE & SON, Vireland, N. J.

PEACH STONES FOR SALE.—Price, \$3.25 per barrel. Address orders to A. E. BARTLETT, Kalamazoo, Mich.

VICK'S
FLORAL GUIDE FOR 1869.

The first edition of ONE HUNDRED THOUSAND of VICK'S ILLUSTRATED CATALOGUE OF SEEDS and GUIDE IN THE FLOWER GARDEN is now published. It makes a work of 100 pages, beautifully illustrated, with about 150 FINE WOOD ENGRAVINGS OF FLOWERS and VEGETABLES, and an ELEGANT COLORED PLATE.

A BOUQUET OF FLOWERS.

It is the most beautiful, as well as the most instructive Floral Guide published, giving plain and thorough directions for the

Culture of Flowers and Vegetables.

The Floral Guide is published for the benefit of my customers, to whom it is sent free without application, but will be forwarded to all who apply by mail, for Ten Cents, which is not half the cost. Address

JAMES VICK, Rochester, N. Y.

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SEEDSMAN & FLORIST,
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Makes this splendid offer: Every person sending two dollars shall receive two dollars' worth of choice, fresh FLOWER SEEDS, selected from his Catalogue of nearly 400 varieties, and one pound of genuine Early Rose Potato as a Premium; and for four dollars, four dollars' worth of Seeds, and three pounds of Early Rose Potatoes. The seeds to be sent in February, and the Potatoes as early as the weather will permit in the spring.

Illustrated Catalogues ready early in January, and FREE to every applicant. Address

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BROOKLYN, CONN.

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Importers and Growers, Wholesale and Retail Dealers in Flower and Vegetable Seeds, Dutch Bulbs, Fruit Plants, Ornamental Shrubs, Roses, &c.

Ellwanger & Barry's Block. Rochester, N. Y.

Seed Potatoes for Sale.

Early Rose, Sebce, and Goodrich Seedlings.

By Pound, Bushel, or Barrel. Circular sent free. Address
RICHARD YOUNG, Morton P. O., Springfield, Del. Co., Pa.

To the Seed Trade.

Our Annual Wholesale List of Vegetable, Agricultural and Flower Seeds, also Gladiolus, Japan Lilies and other Spring Bulbs for 1869, is ready for mailing.

J. N. THORBURN & CO.,

15 John-st., New York.

New Dwarf Prolific Tomato.

In offering this new Tomato to the public I claim it to be the earliest, most prolific, and best-flavored Tomato grown. It is very smooth, red, very dwarf, growing about half the height of common tomatoes. For Market Gardeners it has no equal. Packages of one hundred seed, 50 cents.

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IMPROVED BRUNSWICK
CABBAGE SEED.

The best and earliest Drumhead.—Sent by mail in 25 or 50 cent packages, or at \$1.00 per ounce, on receipt of price. Ours is the Original Stock, and we warrant it the purest in the country. Also Boston Market Tomato Seed, early, smooth and solid, 10 cents per package. Send for our Catalogue. Correspondence in English or German.

A. SCHLEGEL & CO.,
Seed Warehouse, 10 South Market-st., Boston, Mass.

Write your address plain.

Gregory's Seed Catalogue.

On my three seed Farms in Marblehead, Mass., where I have over fifty acres in seed, I have raised this season nine varieties of Cabbage seed; six of Beet seed; four of Carrot; ten of Turnip; twenty of Tomatoes; seven of Corn; five of Onions; eleven of Beans; six of Mangel Wurzel, and seven of Squashes,—besides seed of numerous other vegetables,—all of which were grown perfectly isolated. I offer the opportunity to Market Gardeners and others who desire to procure as large a proportion of these seed as possible direct from the grower. Catalogues gratis to all.

JAMES J. H. GREGORY, Marblehead, Mass.

Bloomington Nursery.

17th Year; 400 Acres; 10 Green-houses.

Fruit Trees, Nursery Stocks, Root Grafts, splendid assortment of seeds of Apple, Pear, Peach, Orange seed and Hedge Plants, Ornamental Trees, Evergreens, Roses, Green-house plants. Send three red stamps for three Catalogues.
F. K. PHENIX, Bloomington, Ill.

Tree Planters Take Notice.

If you want Root Grafts of Apple or Pear, or young fruit trees of hardy varieties, or Pear, Apple, and Evergreen seeds, send for price list to
E. H. SKINNER,
Marango, McHenry Co., Ill.

Farmers and Planters,



Desirous of giving the FERTILIZERS of the

Lodi Manufacturing Comp'y
a Trial, will please send for a Pamphlet.
Double Refined Poudrette,
Bone-dust, Bone-flour, and
Nitro-phosphate of Lime.

Address

The Lodi Manufacturing Company,
Office, 66 Courtlandt Street,
Box 3133, New York P. O.

NEW JERSEY STATE AGRICULTURAL COLLEGE,
New Brunswick, Oct. 31st, 1868.

James R. Dey, Esq., Pres't of the Lodi Man'g Co.,

Dear Sir: The Double Refined Poudrette and Nitro-phosphate of Lime prepared at your works have been tried upon our farm crops the past season; viz: Upon Potatoes, Corn, Beets, Carrots, Cabbages, and Turnips, which have been already gathered, and upon wheat, which we hope to report next year. The experiments are entirely satisfactory, proving that these fertilizers have paid us full 100 per cent above their market price in the increase of crops this year, and enable us to recommend them to the public.

Respectfully yours,
GEO. H. COOK, Prof. of Agriculture.

DOVER, DEL., Oct. 12th, 1868.

Lodi Manufacturing Co.,

Gent.: We used the Double Refined Poudrette we purchased of you, on Tomatoes and Rhubarb. Land, sandy loam. The result proved more favorable than we expected. Both made a good growth, and the Tomatoes matured Ten Weeks earlier than others not manured.

We are, Yours respectfully,
WILLIAMS BROS.

KENANSVILLE, N. C., Oct. 26th, 1868.

Dear Sir: Your "Nitro-phosphate of Lime," and the Double Refined Poudrette sold by us last season, were used on Corn, Potatoes, Sweet Potatoes, and Garden Vegetables, with satisfactory results, and our Farmers express a desire to try them again.

HINSON & BROWN.

NEAR CHEROKEE CORNER, OGLETHORPE CO., GA.,
Oct. 21th, 1868.

Dear Sir: The ton of Double Refined Poudrette I purchased of your agent, Dr. H. M. Smith, at Athens, I used on about six acres of Cotton in the hill, turning with the foot a light covering of earth over the Poudrette before dropping the seed. The Cotton came up well and grew off finely, and I think it has very nearly, if not quite, Doubled the crop. As evidence of the estimation which I place on it as a fertilizer, I intend to order two tons for my next crop.

Yours truly,
P. W. HUTCHISON, Sen'r.

EUFULA, ALA., Oct. 9th, 1868.

Dear Sir: My Cotton grew off very handsomely under the influence of the Double Refined Poudrette, and was fully equal to other fields joining my plantation which had been manured with the best Superphosphate.

But the entire crop of Cotton in this section was ruined by the Worm, and therefore our investments in Fertilizers this year have been in a measure lost.

In haste, Yours respectfully,
ELI S. SHORTER.

MOSCOW, LUZERNE CO., PA., Oct. 9th, 1868.

Dear Sir: About one-half of the two tons of Double Refined Poudrette I purchased last spring I distributed among my neighbors, and I believe all that used it are well satisfied. I applied it to cabbage, melons, flowers, etc., to great advantage, but its greatest value to me is the almost certain realization of a heavy crop of corn. To satisfy myself and others I planted one row of corn in the middle of the field without applying any Poudrette, and did not mark it, feeling assured it would easily be found: I was not mistaken, as it was far inferior to the rest of the field. The cost to me per acre (including freight) was \$7.50, (using about 450 pounds.) I cannot give the actual advantage I received, but at the present value of corn I estimate it at from \$15 to \$25 per acre.

Very respectfully yours,
CHAS. A. HAVENSTRITE.

GREENWICH, N. J., Oct. 21st, 1868.

Dear Sir: I can speak in the highest terms of my Nitro-phosphate of Lime. It did admirably. I used it on stalk ground spread broadcast 300 lbs. per acre, plowed in. It was equal to Peruvian guano, with a saving in cost of \$2.50 per acre in favor of the Phosphate. I also applied 1000 yard manure, 10 loads per acre on part of the same field; also 300 lbs. fine bone per acre, which also did well, but I can safely say the Phosphate was second to none of the other applications, making 60 bushels of corn per acre where 40 bushels would have been as much as I could have looked for without the Phosphate. It was used by my neighbor, Capt. Charles Miller, did equally as well.

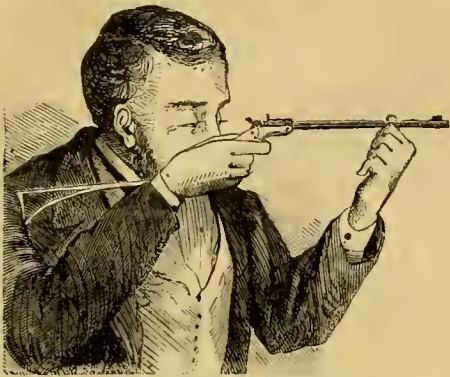
Yours with respect,
B. F. MAUL.

KINGSTON, N. J., Oct. 8th, 1868.

President Lodi Manufacturing Co.—Dear Sir: The Double Refined Poudrette I purchased of you last spring, I used on part of my corn as a dressing in the hill. I have never used anything equal to it, and I feel quite certain I shall have a third more corn where it was used than where it was not, all other things being equal. In fact, I have been rather enthusiastic over this fertilizer, and also over your Bone-dust, which I have used for three years, the effect of both being so visible on my farm. I remain yours truly,

H. L. R. VAN DYCK.

For several hundred more certificates of like nature see Pamphlet, which will be mailed FREE on application to us, Address as above.



Premium No. 106.

A remarkable little Fire-arm—A "Breech-loading Pocket Rifle"—weight only eleven ounces, yet shoots with great accuracy and power from 30 to 100 yards or more.—Can be loaded and fired five times a minute.—Can be carried in a side pocket while working in the fields, ready to bring down game at short notice. Exceedingly convenient in new countries as a defensive weapon, or for picking off game, and useful generally upon the farm where wild animals, large or small, are common.—A beautiful little piece for amusement in target practice.

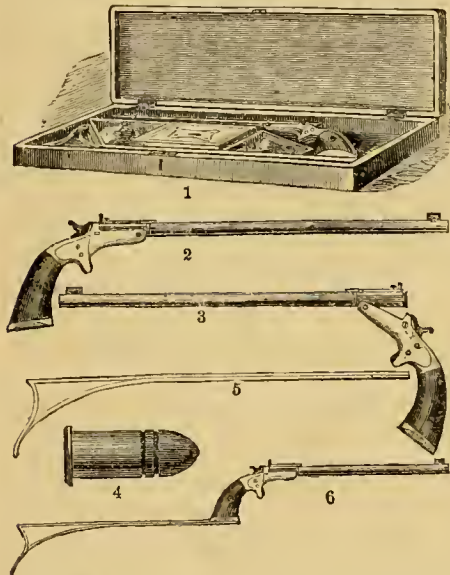


Fig. 1. Mahogany Box containing the Pocket Rifle, Extension Breech, Cleaning Rod, and 250 rounds of ammunition.—Fig. 2. The Rifle.—Fig. 3. The Breech opened for loading.—Fig. 4. Copper cartridge, containing powder, ball, and percussion complete.—Fig. 5. Extension Breech.—Fig. 6. The extension Breech piece applied.—Fig. 7. (at the head) Mode of holding when the Breech is used.

While in Ulster County last October, we fell in with a little arm in the hands of a farmer who was out plowing, and its performances were so striking that, on our return, we immediately called on Messrs. Cooper, Harris & Hodgkins (No. 177 Broadway) who retail them, and procured one for testing. After firing it over 300 times, at targets, etc., varying in distance from 25 to 110 yards, and in several cases farther, we are prepared to recommend it, in strong terms, as a most useful weapon, especially for farmers who wish to have an effective weapon with them when out at work near groves, or wherever game is likely to be seen. It is convenient, also, for carrying on a journey, where a serviceable "shooting iron" may sometimes be desirable. We present pictures of four targets, reduced to one-fourth the actual diameter. The balls were loaded and fired as fast as the marker standing near the target could plug the holes successively made. Ordinarily it is only necessary to carry the weapon in a side pocket under the vest, with the ammunition in a small box in the pocket.

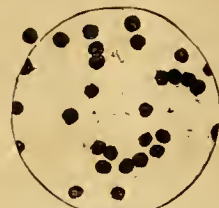


Fig. 8.—Distance 30 yards.—Thirty-six successive shots fired off-hand (without a rest) in 11 minutes, by Orange Judd, Nov. 28.



Fig. 9.—Distance 40 yards.—Thirty-six successive shots fired in 21 minutes, by Orange Judd, Nov. 28, 1868. Targets 4 1/2 inches diameter.



Fig. 10.—Distance 66 yds.—Twenty-five successive shots fired Dec. 5, 1868, by Orange Judd. The balls all entered the 2nd inch-board.



Fig. 11.—Distance 66 yds.—Twenty-five successive shots fired Dec. 5, 1868, by David W. Judd. (Editor N. Y. Commercial Advertiser.)

Any one needing the extension breech, to steady the piece while firing, can put it in the pocket along with the weapon. The bore is 22-100ths of an inch, and the ball would kill a deer or other large animal at a moderate range, if aimed at a vital part. The copper case confines the strength of the powder so as to give great force. At 40 yards the balls go through two inch-thick boards, and penetrate a third. At a distance of 110 yards, we put 22 balls, out of 25 fired, inside a 10-inch ring, and they pierced to the center of the second inch-board and beyond.

The copper cartridges are coated with paraffine, which renders them water-proof, and also lubricates the barrel. We wiped out the barrel once, in firing 300 shots, and that was hardly necessary. To load, it is only necessary to half-cock, touch a spring which releases the barrel, thrust in the cartridge, press the barrel in place again, take aim and fire. But two cartridges in 300 missed fire, and one of these fired on turning it round to present another part of the percussion ring to the hammer.

Impressed with the utility of this little weapon, we sought out the manufacturers (Messrs. J. Stevens & Co., Chicopee Falls, Mass.), and we are happy to announce that we have made arrangements with them by which we can offer 100 or more as Premiums for clubs of subscribers. The price of the weapon, plated extension Breech, cleaner, and 100 rounds of ammunition, all complete in a neat mahogany case, with lock and key, is \$15. For the convenience of those who may live in remote Western localities, we put 250 Rounds or Cartridges in the Premium cases, making the whole \$16.

We will present one of these Premium Cases complete, (with the gun, 250 rounds of ammunition, etc.), to any person sending us 24 subscribers to the American Agriculturist for 1869, at the regular price of \$1.50 each—or 80 subscribers at \$1 each.

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Concrete Walks and Pavement.
For Streets, Sidewalks, Carriage-ways, Floors, and Private Walks.
BULLIEU & FISK, Patents.
Laid in one continuous piece. Smooth, durable and Fire-proof. Noiseless, cleanly, and not injured by frost, heat, or water. Preferable to stone, and costs but half as much. Work done, and Town, County and State rights for sale, by RUSSELL, FISK & CO., 410 West 23d-st., New York City. * * Send for a free Circular, with full particulars.

Dr. Grant's Deep Working Plows
Supply at small cost the full equivalent of spade culture. Plow from 12 inches to 24 inches deep, thoroughly pulverizing and mixing. All farmers should understand them. Illustrated Circular sent on application.
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This popular Churn is the Best Manufactured, the Hand-somest, the Strongest, the Most Efficient and Most Durable Churn Made!
It is offered to the Trade and Farmers as a staple article, it being in use in various States of the Union, and having proved itself to be
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2d.—A perfect Butter Worker and Salter, doing the work more easily and thoroughly than it can be done in the ordinary way.
3d.—A Churn quickly cleaned and very easily operated; a child can work it.
No. 2 holds 8 gallons, churns 5 gallons.
No. 3 holds 10 gallons, churns 7 gallons.
No. 4 holds 13 gallons, churns 10 gallons.
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WM. C. CHAMBERLAIN, Gen'l Ag't.,
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Most persons have at some time felt the need of an instrument that could be operated as a hand, at a distance. The Universal Iron Hand will seize by the leg and hold any hog, sheep or calf, fish out anything that has fallen into a well or cistern, take turkeys or chickens out of a tree, or from the roost, pick fruit, seize and hold a horse by the bit, or a bull by the nostrils. It is a Hand working at a distance, and one that neither biting, scratching, or striking will injure. Retail price only one dollar. Sent anywhere by express on receipt of the price. Dealers sell them rapidly everywhere.
Also for sale Doty's Clothes Washer, Universal Wringer, Punching and Shearing Machinery, Tire Upsetters, Bag and Store Trucks, Corn Shellers, Bag Holders. Send for our free illustrated circular.
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IMPORTERS AND MANUFACTURERS OF
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BOTH HAND AND HORSE-POWER PRESSES,
for baling all kinds of material, on hand and made to order. Also, a practical machine for sawing down timber. Price \$25. For price-list and full information, call on or address the manufacturers, INCERSOLL & DOUGHERTY, Greenpoint, (Brooklyn), N. Y.

Self-Acting Carriage Gate.
Opens and closes by action of the wheel without stopping horse or getting out of carriage. Agents wanted for every State or County in the U. S. Office, 225 Superior-st., Box 2156 Cleveland, Ohio. M. G. Brown, Gen'l Agent Am. Gate Co.

THE AMERICAN AGRICULTURAL ANNUAL

For 1869.



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FINELY ILLUSTRATED,

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For 1869.



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FOR EVERY HOME.

The third number of this beautiful serial is now ready. It contains a popular record of horticultural progress during the past year. Among the contributors will be found the names of

WARDER, HENDERSON, BARRY, HOOPES, ELLIOTT, SUCH, FULLER, PARSONS, BRILL, GREGORY,

and others identified with American horticulture.

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BEAUTIFUL ILLUSTRATIONS.

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NEW BOOK FOR HUNTERS.

THE HUNTER AND TRAPPER.

BY

HALSEY THRASHER,

AN EXPERIENCED HUNTER.

ILLUSTRATED.

This little book will be read with interest by all who would find instruction and entertainment in the narrative of an old hunter's experience. The following, from the author's Preface, will give an idea of the character and design of the work:

"I am a blacksmith by trade, but when I was a boy I became fond of a gun and a trap, and my first success in my shop was to make a steel trap. It was my aim to become an expert trapper, and I tried my hand at catching foxes.

"Many a dollar have I paid to cunning old men to learn the art, and I have succeeded pretty well, too; but why has not some man of experience written a book explaining the art of successfully trapping the different kinds of fur animals? I propose to tell the boys how to do it.

"I have studied the nature and habits of animals of different species, and a plan that was good to capture the otter, the mink, and the beaver, forty years ago, is just as good now as then. The nature of animals doesn't change like the nature of men; we have grown wiser, while they have remained the same. The mode of capturing them when I was a boy, and the way used now, may be put together, and succeed better than either one alone.

"Men are traveling through the country selling recipes at a high price to teach how to dress skins. I propose in this work to teach all these things, so that a man may have them in a neat little volume for reference at any time. I shall also treat upon angling for the trout, the bass, and the pickerel, which I think I understand. I hope to make it all so plain that even the inexperienced will, in some measure, succeed."

CONTENTS.

CHAPTER I.—Deer Hunting. CHAPTER II.—How to Catch the Fox. CHAPTER III.—How to Hunt and Catch the Beaver. CHAPTER IV.—How to Catch the Otter. CHAPTER V.—How to Catch the Mink. CHAPTER VI.—How to Hunt and Catch the Muskrat. CHAPTER VII.—How to Catch the Marten. CHAPTER VIII.—How to Catch the Fisher. CHAPTER IX.—How to Catch the Raccoon. CHAPTER X.—How to Hunt and Trap the Bear. CHAPTER XI.—How to Hunt and Trap the Wolf. CHAPTER XII.—How to Trap the Pocket Gopher. CHAPTER XIII.—Fishing for Trout, Pickerel, and Bass. CHAPTER XIV.—How to Hunt the Honey Bee. CHAPTER XV.—Hints About Shot-Guns and Rifles. CHAPTER XVI.—Traps. CHAPTER XVII.—Dressing and Tanning Skins and Furs.

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(Advertisements on this page, \$2.50 per A gate Line of Space.)

ESTABLISHED 1861.

THE GREAT AMERICAN TEA COMPANY

RECEIVE THEIR TEAS BY THE CARGO FROM THE BEST TEA DISTRICTS of CHINA and JAPAN, and sell them in quantities to suit customers AT CARGO PRICES.

To give our readers an idea of the profits which have been made in the Tea trade, we will start with the American houses, leaving out of the account entirely the profits of the Chinese factors.

1st.—The American house in China or Japan makes large profits on their sales or shipments—and some of the richest retired merchants in the country have made their immense fortunes through their houses in China.

2d.—The Banker makes large profits upon the foreign exchange used in the purchase of Teas.

3d.—The Importer makes a profit of 30 to 50 per cent in many cases.

4th.—On its arrival here it is sold by the cargo, and the Purchaser sells it to the Speculator in invoices of 1,000 to 2,000 packages, at an average profit of about 10 per cent.

5th.—The Speculator sells it to the Wholesale Tea Dealer in lines at a profit of 10 to 15 per cent.

6th.—The Wholesale Tea Dealer sells it to the Wholesale Grocer in lots to suit his trade, at a profit of about 10 per cent.

7th.—The Wholesale Grocer sells it to the Retail Dealer at a profit of 15 to 25 per cent.

8th.—The Retailer sells it to the Consumer for ALL THE PROFIT HE CAN GET.

When you have added to these EIGHT profits as many brokerages, cartages, storages, cooperages and wastes, and add the original cost of the Tea, it will be perceived what the consumer has to pay. And now we propose to show why we can sell so very much lower than other dealers.

We propose to do away with all these various profits and brokerages, cartages, storages, cooperages and wastes, with the exception of a small commission paid for purchasing to our correspondents in China and Japan, one cartage, and a small profit to ourselves—which, on our large sales, will amply pay us.

By our system of supplying Clubs throughout the country, consumers in all parts of the United States can receive their Teas at the same price (with the small additional expense of transportation), as though they bought them at our warehouses in this city.

For manner of getting up Clubs, see former advertisement in this paper.

Parties sending Club or other orders for less than thirty dollars had better send a Post-office draft or money with their orders, to save the expense of collections by Express, but larger orders we will forward by express, "to collect on delivery."

Hereafter we will send a complimentary package to the party getting up the Club. Our profits are small, but we will be as liberal as we can afford. We send no complimentary packages for Clubs less than \$20.

Parties getting their Teas of us may confidently rely upon getting them pure and fresh, as they come direct from the Custom House stores to our Warehouses.

We warrant all the goods we sell to give entire satisfaction. If they are not satisfactory, they can be returned at our expense within 30 days, and have the money refunded.

The Company have selected the following kinds from their stock, which they recommend to meet the wants of clubs. They are sold at cargo prices, the same as the Company sell them in New York, as the list of prices will show.

PRICE LIST OF TEAS:

- OOLONG (Black), 70c., 80c., 90c., best \$1 7/8 lb.
- MIXED, (Green and Black), 70c., 80c., 90c., best \$1 per lb.
- ENGLISH BREAKFAST (Black), 80c., 90c., \$1, \$1.10, best \$1.20 per pound.
- IMPERIAL, (Green), 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
- YOUNG HYSON (Green), 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
- UNCOLORED JAPAN, 90c., \$1, \$1.10, best \$1.25 per pound.
- GUNPOWDER, (Green), \$1.25, best \$1.50 per pound.

Consumers can save from 50c. to \$1 per pound by purchasing their Teas of this Company.

COFFEES ROASTED AND GROUND DAILY.

GROUND COFFEE, 20c., 25c., 30c., 35c., best 40c. per pound. Hotels, Saloons, Boarding-house keepers, and Families who use large quantities of Coffee, can economize in that article by using our FRENCH BREAKFAST AND DINNER COFFEE, which we sell at the low price of 30c. per pound, and warrant to give perfect satisfaction. ROASTED (Unground), 30c., 35c., best 40c. per lb. GREEN (Unroasted), 25c., 30c., 35c., best 35c. per lb.

NOTICE OF THE PRESS.

From the American Agriculturist.

THE GREAT AMERICAN TEA COMPANY.—To Queries.—Before admitting their advertisement, we learned that a large number of our clerks and others had for several months been buying their Tea and Coffee from this Company, without its being known who they were, and that they had been highly pleased with their purchases, both as to quality and price, and were all recommending their friends to the same course. As we have published the advertisement for many months, and received no complaints, we conclude "there is no humbug about the establishment."

N. B.—INHABITANTS OF VILLAGES AND TOWNS WHERE A LARGE NUMBER RESIDE, BY CLUBBING TOGETHER, CAN REDUCE THE COST OF THEIR TEAS AND COFFEES ABOUT ONE-THIRD, (BESIDES THE EXPRESS CHARGES), BY SENDING DIRECTLY TO "THE GREAT AMERICAN TEA COMPANY."

CLUB ORDER.

SPRINGFIELD, Ill., Sept. 16, 1867.

TO THE GREAT AMERICAN TEA COMPANY, 31 and 33 Vesey Street, New York.

Please send me by Merchants' Union Express the following bill of Tea, &c.

1 lb. Imperial.....	S. Lanphear.....	at \$1.25....	\$1.25
1 Black.....	".....	at 1.00....	1.00
10 Java Coffee, raw.....	".....	at 35....	3.50
1 Imperial.....	H. M. Lanphear.....	at 1.25....	1.25
1 Black.....	".....	at 1.00....	1.00
10 Java Coffee, raw.....	".....	at 35....	3.50
3 Imperial.....	B. B. Lloyd.....	at 1.25....	3.75
1 Imperial.....	Horace Morgan.....	at 1.25....	1.25
1 Black.....	".....	at 1.25....	1.25
2 Imperial.....	Simon String.....	at 1.25....	2.50
5 Black.....	Wm. Bishop.....	at 1.00....	5.00
3 Uncolored Japan.....	J. Marr.....	at 1.25....	3.75
8 Java Coffee, raw.....	L. A. Allen.....	at 35....	2.80
4 Imperial.....	A. Morris.....	at 1.25....	5.00
1 1/2 Imperial.....	Thos. Higgins.....	at 1.25....	1.88
1 1/2 Black.....	".....	at 1.00....	1.50
5 Black.....	A. Hickox.....	at 1.00....	5.00
3 Black.....	J. Farley.....	at 1.00....	3.00
2 Imperial.....	".....	at 1.00....	2.00
1 1/2 Imperial.....	Mr. Carey.....	at 1.25....	1.87
1 1/2 Black.....	".....	at 1.00....	1.50
10 English Breakfast.....	T. Hudson.....	at 1.20....	12.00

\$65.55

Gents—Above I send my fourth order. Your Teas have given good satisfaction, and those who have used them will have no other, but induce their friends to send also. To prove this; I had made up my order and got a Post-Office Money Order, when others came in and nearly doubled the amount, as you will see by second money order, both of which I enclose.

The last order came safely to hand by Merchants' Union Express. Accept thanks for complimentary package.

Very respectfully,

S. LANPHEAR.

Caution.—As some concerns, in this city and other places, imitate our name and style of advertising and doing business, it is important that our friends should be very careful to write our address in full, and also to put on the number of our Post-Office Box, as appears in this advertisement. This will prevent their orders from getting into the hands of these bogus imitators.

POST-OFFICE orders and Drafts, make payable to the order of "The Great American Tea Company." Direct letters and orders (as below, no more, no less).

Great American Tea Company,

Nos. 31 and 33 VESEY-ST.,
Post-Office Box, 5,643, New York City.

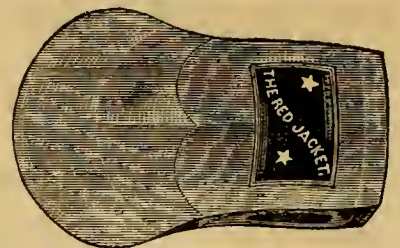
HORSFORD'S SELF-RAISING BREAD PREPARATION makes the most wholesome and best of bread, biscuit, cakes, &c. Unlike some other yeast, it contains no POISON to create DYSPEPSIA, and the bread may therefore be eaten hot without detriment. Resolving itself into Phosphate of Lime and soda, it prevents RICKETS, CHOLERA, and decay of TEETH, and promotes the growth of Muscle and Bone. In "raising" the dough it does not, like other yeast, decompose flour, but adds nutriment to the bread, and otherwise improves it in quality and quantity. Each package contains full directions for use. Send to H. T. Love, No. 5 James Slip, New York, for "The Good Cook's Hand Book," for particular directions, to be sent you gratis, and ask your Grocer for "Horsford's Bread Preparation." JOHN DWIGHT & CO., Wholesale Agents, No. 11 Old Slip, New York.

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FOR FARM, MINING or MECHANICAL PURPOSES. These machines require no brick work; mounted on legs they are especially adapted for use in MILLS, SHOPS, FOUNDRIES or PRINTING ROOMS,—or mounted on wheels they are adapted for out-door work, TRIMMING, WOOD SAWING, &c. See Rural New-Yorker of August 15th, 1868, first page.

Circulars with description and prices furnished on application to A. N. WOOD & CO., Eaton, Madison Co., N. Y.

Red Jacket Axe.



FREDERICKTOWN, KNOX Co., O.
November 2, 1868.

LIPPINCOTT & BAKWELL—

Dear Sirs:—I received your second Red Jacket Axe per express, and now acknowledge the same. For the benefit of all whose desires or necessities make it their business to chop with an axe, I would say: Take the Red Jacket; and, as the Supreme Court have held that a Doctor's opinion without his reasons is of little value, I will give my reasons: *First*—The Red Jacket cuts deeper than the common bit. *Second*—It being round on the cut, it does not stick in the wood. *Third*—Every chopper with the common axe must discover that there is as much labor and strength expended in taking the axe out of the cut as in making the blow. *Fourth*—This with the Red Jacket is all avoided, and from one-third to one-half the labor is saved in getting the same quantity. *Fifth*—By putting in the same labor that is necessary with a common axe, you can easily make at least thirty-three per cent more wood in the same time. You are safe in letting any honest man try your Red Jacket on these tests, and if it fails, refund him his money. Respectfully, yours,

HARRY BALDWIN,

For sale by all responsible Hardware Dealers, and the manufacturers, LIPPINCOTT & BAKWELL, PITTSBURGH, PA., Sole owners of Colburn's and Red Jacket Patents.

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Large Red Wethersfield, per Pound, \$5.00
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- No. 5.—NOT FOR JOSEPH.

Either of the above can be had at the Book Stores or News Depots, or by enclosing the price to

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Messrs. DAUGHADAY & BECKER, the publishers of OUR SCHOOLDAY VISITOR, Philadelphia, have just published a large, original, finely executed steel plate engraving, entitled GEN'L GRANT AND HIS FAMILY, from the hand of the celebrated Sartain, which is destined to become one of the most popular pictures of the day. This work has cost months of skilled labor, and more than ONE THOUSAND DOLLARS in cash, and readily sells for \$2.50. Its regular price. This magnificent picture and a copy of OUR SCHOOLDAY VISITOR, one of the oldest, handsomest, and cheapest Young Folks' Magazines in this country, which alone is worth \$1.25 a year, will both be sent to every subscriber for 1869, for \$1.50! Where clubs are formed, a still greater reduction. Please send 10 cents AT ONCE for sample number of the VISITOR, and Circular giving the origin and complete description of this large and elegant engraving, and full list of Premiums for Clubs. A rare chance. Agents wanted everywhere. Address, DAUGHADAY & BECKER, Publishers.

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& Agricultural Directory.

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FREE! Our New Catalogue of Improved STENCIL DIES, MORE THAN \$200 A MONTH is being made with them. S. M. SPENCER & CO., Brattleboro, Vt.

ALTON LARGE NUTMEG MELON.—New.—Unparalleled as a shipping variety." Per ounce, 30 cts., per lb., \$3.50. Send for CIRCULAR. BARLEE & CONDON, Upper Alton, Ill.

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VOLUME XXVIII.—No. 2.

NEW YORK, FEBRUARY, 1869.

NEW SERIES—No. 265.



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"A D V E R S I T Y."—AFTER A PAINTING BY VERLAT.—Drawn and Engraved for the American Agriculturist.

There are several ways in which deer are killed. Some are simple butchery, and where deer are plenty may be practiced by honorable men for the sake of food; but no true sportsman ever kills wantonly or for the mere sake of killing. Men may get venison when the animal has no chance for its life, or next to none, and when they display no more skill than if they shot calves in a barn-yard; but they have no sport. The pleasure in hunting lies not in killing, but in the exercise of the art, the care, the precaution, a quick wit, a steady eye, and a close aim, while the result of a shot may be

painful to a sensitive man, as he sees the stricken victim sobbing out the last gasps of its wild life.

In deer-stalking or still-hunting the sportsman prefers a rifle throwing a heavy ball, for a deer shot even through the heart, with a light ball, will often run many rods, and perhaps get away or hide itself, only to die a lingering death. The shock produced by a large ball usually gives the hunter time to reload and come up before the animal revives. Still-hunting is not lying in wait at a spring or salt-lick where deer are known to come daily, which approaches the barn-yard style of sportsmanship. Silently fol-

lowing up the trail in the dew or light snow, and attacking the deer on its own feeding grounds, the hunter keeps himself to the leeward, for hearing and scent are very acute in the deer, approaches with extreme caution, and is usually obliged to fire at long range. The application of the title given by the distinguished artist is almost as inappropriate to the fallen buck as to the lucky hunter, whose appetite is no doubt sharpened to appreciate a juicy steak for his late supper; but the bullet brings "adversity" indeed to the forlorn young doe, left alone, perhaps, even before the end of the honeymoon.

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Back Volumes Supplied.—The back volumes of the *Agriculturist* are very valuable. They contain information upon every topic connected with rural life, out-door and in-door, and the last ten volumes make up a very complete library. Each volume has a full index for ready reference to any desired topic. We have on hand, and print from electrotype plates as wanted, all the numbers and volumes for ten years past, beginning with 1857—that is, Vol. 16 to Vol. 27, inclusive. Any of these volumes sent complete (in numbers) at \$1.75 each, post-paid, (or \$1.50 if taken at the office). The volumes, neatly bound, are supplied for \$2 each, or \$2.50 if to be sent by mail. Any single numbers of the past ten years will be supplied, post-paid, for 15 cents each.

AMERICAN AGRICULTURIST.

NEW-YORK, FEBRUARY, 1869.

If we ask our readers this first of February a few questions which, though perhaps none of our business, yet interest us much, we hope it will not be thought an impertinence. Are you going to try peas this year? or shall you sow oats or barley, as usual? Have you bought your seed-wheat? or do you raise your own seed? If not, why don't you raise it? It is worth more than the market price, as you will find if you have to buy. Why is it that your land is so weedy that you have to buy all your seed? You might have a good deal of clover-seed, which it is easy to get tolerably clean. Why don't you plan to save enough for your own use? Clover is the cheapest manure you can use. Did you ever plow under a crop? Are you going to buy a mower and reaper this year? or will you hire, as you did last? You probably pay, if you hire, ten per cent interest on two or three machines. Is it not so? How about horse-rakes? Don't you know that it takes the best man to work the old revolver, and a smart boy can work many of the new ones perfectly well? You never put in any grain with a drill; why not? Don't you think it would be a great saving,—taking less seed, making the crop ripen earlier, giving you better straw and a surer and larger crop? What plans have you made for the spring and summer? How many hands will you employ? What permanent improvements are you going to make? Do you know any man who would take your farm and make more money on it than you, without taxing the land more than you do, if so much? If so, how do you think he would do it? Will it not pay you to do the same?

February is just the month to discuss a great many such questions, and some of them will keep until warm weather. But while they are mooted, the work must go on just the same.

Hints about Work.

Over a good part of the Union, it is neither winter nor spring; the frost may be out of the ground so that we can begin setting fences and doing some kinds of spring work, and it may come on and freeze again, and a second edition of winter in all its severity be upon us.

Winter Work.—Make the best use of the snow to haul home the timber, fencing stuff, and boards, from the saw-mill or from the wood lot. Employ every hour of daylight, when other important work is not pressing, in cutting

Fire-wood, and thus making provision against a more hurried season, when every hour will be worth two or three hours of this time of the year. There is nothing that pleases the good wife better than a nice lot of clean, dry chips and light stuff, to make a quick blaze; and if she or her maid has to run to the wood-pile, tear off splinters, pick up damp chips, and so spend five minutes out of the kitchen just at the critical time when the dinner needs attention, the farmer must not complain if the potatoes burn in the pot, and things go wrong.

Ice, nice ice, will keep splendidly on a floor of rails, under a heap of straw. Lay a floor of slabs on three old rails as sleepers, the floor being 12x12 feet square; cover it a foot thick with straw; lay up a square pile of ice eight or ten feet high, of solid square pieces, having the spaces between the cakes well chinked in with pounded ice; set posts, as for a high fence, two feet outside, all around; board up with close-fitting 16-foot inch or inch-and-a-quarter boards, and stuff the whole, outside the ice, with straw; put on a single-pitch roof of boards, inclined to the north, and fill the whole interior above the ice with straw. The ice will keep well, and should be used from the top only. It is well, before piling up the ice, to set two light posts, two feet from each corner, against which the ice may rest, so that the corners of the pile will remain firm.

Laborers.—Look out early for good farm hands. The best men are the first to make engagements;

common hands may be picked up more easily. On every large farm the farmer should have a man he can make a foreman, to allow himself a little freedom from the constant attention to minor details. Such a man may often be obtained for five dollars a month more than a mere clodhopper, who can only be trusted to work under the eye of a "boss." With a good, active, intelligent German, who has been in this country a few years, one can employ, at low wages, a class of his countrymen which would otherwise only be a nuisance on the farm.

Manure.—The time for economizing in the use of bedding is late in the season, if ever. Early in the winter, use as much as you can in order to increase the manure pile. This month often offers a first-rate opportunity to work over all the accumulations of manure in the yards and cellars, to throw them in compact heaps, well laid up, mingling with them as much muck and litter as can be spared from the stores of bedding for use later in the season, and all the uneaten cornstalks, which are too apt, at this time in the winter, to disfigure the yards. Composts may be greatly enriched and their fermentation quickened by a mixture of hog and hen manure; but it is important that these should be pretty thoroughly disseminated through the whole mass in order to give it uniformity.

Plows and Harrows.—Farmers living at a considerable distance from mechanics should have, not only good plows, but plenty of duplicate parts, that they can themselves attach in case of breakage; several new shares, at least one new beam for each breaking-up plow, and several plow handles that may be adapted to the plows most used. Have wood ready to mend harrows, if they are to be subjected to any trying work among stumps or on rough, rooty ground. Give a coat of paint to all tools of this class, being particular to work it well into the joints, and it is well to give these spots several coats, so that water cannot get in. Paint tools only when thoroughly dry.

Wagons.—When the sleighing is good, don't forget to put the wagons in good order.

Good Roads, whether good for wheels or runners, should be made use of, so that there shall be no need to deliver sold goods when the roads are breaking up in the spring, nor to do heavy teaming, like hauling home lumber, coal, and provisions. What a good thing it would be if we had in this country such grand highways as connect almost every farming community in Europe with the market town, and market towns with one another all over the country! On these roads a pair of horses will trundle off, at a trot, on level ground, four tons on a wagon that weighs a ton. The roads are, the year round, equal to ours in midwinter.

Working Cattle.—Save the strength of the ox for the plow and for the heavy work; feed him a little grain; keep him in first-rate working order, and give just work enough to prevent his neck getting soft; then when the time for hard labor arrives, give good feed and all the work he can do. **Work the Bulls!** They are healthier for it; they are easier and safer to handle; they are surer and better stock-getters; they are more intelligent than oxen, and easier taught, if they do not learn that dangerous lesson, that they need not mind unless it suits their own convenience.

Cows.—Feed dry cows well; give them a daily feed of meal of some kind, corn-meal and wheat-bran, or corn-meal and oil-cake, or some other milk-producing or fattening diet. You will get it all back when you begin to milk. Keep neat stock of all kinds sheltered and warm. Do not expose them to the spring storms, which are more trying than those of the autumn and early winter.

Young Cattle should never stop growing until they come to full maturity. They will surely stop, and thenceforth have that stunted, weakly look so common among "scrubs," unless they are sheltered and so well fed that they do not lose flesh.

Horses and Colts.—The same remarks are applicable to these animals as to neat stock, except that the horse will thrive under much surer exposure than cattle, if he has enough to eat and a shed to go under. It is, however, the worst policy to put

the toughness of any animal to severe tests. Horses must be fed up for the hard work of spring. Great care should be taken that colds are not caught from exposure during sleighing excursions, or after other sweating work; they are very apt to run into confirmed coughs and the heaves, especially at this season. Blanket only and always when warm, rub off dry, withhold food and drink, and litter freely. A horse-stable should not be exposed to interior draughts.

Sheep.—Have an eye to evidences of parasites, and apply a strong solution of carbolic soap, thrown into the parted wool, on the parts most affected, from a bottle having a quill through the cork.

Selling Stock of all kinds must not be neglected; irregularity is nearly as bad as entire neglect.

Poultry require close attention, especially if they are laying freely. Hens that are repeatedly checked in their laying by exposure to cold are liable to become diseased. If hens are sitting, they must be well protected, and must not be interfered with, lest they remain in cold weather too long off their nests, and the eggs get chilled. We know of no better feed for laying hens or young chicks than good wheat screenings.

Spring Work.—As soon as the frost is out of the ground, and the weather is favorable,

Re-set Fences, and renew rails and posts, wherever they are failing. Staking and binding with withes answers a tolerable purpose, but is a very bad-looking way of mending a fence.

Repair the Roads by filling soft spots with stones, and covering them with good, sharp gravel, leaving the cart-paths and farm roads rounded up, free from water, and as even as you can with the time and labor you have to put upon them.

Ditching and Draining may be at once undertaken, and pushed at odd times, when the ground is too wet to plow.

Work in the Horticultural Departments.

In arranging plans for spring work, do not lay out more than can be done thoroughly. Amateurs especially are apt to grasp at too much and take up a heavier load than they can carry. Laying out and planting are not all, but only the beginning; the labor and cost of cultivation and maintenance are to be taken into the account. "Walks and Talks" discusses the size of farms, and his remarks apply to the garden, whether it be one for ornament or for use. Orders for trees and seeds sent the present month are more likely to be satisfactorily filled than if delayed until planting time.

Orchard and Nursery.

Plant Trees in those States where the season is sufficiently advanced to admit of it. At the North it is much better to wait until spring is well opened. Young, recently planted trees are often much injured by exposure to cold, dry winds, as they are unable to take up moisture to supply the waste by evaporation.

Grafting, for the same reason, should not be done too early. If the cions are put in just as the tree is starting into growth the chances of success are much greater.

Nursery Trees, if frozen in transportation, as they are apt to be, are not likely to be injured if allowed to thaw very gradually. Cover the package with hay or straw, that the thawing may go on slowly.

Injured Trees are to be attended to as soon as the trouble is discovered. If any limbs have been broken by storms, secure a smooth wound, as directed in the article on pruning on page 57.

Girdling by rabbits and mice may now be discovered. Most trees injured in this way may be saved by proper care. Draw up a mound of earth to completely cover the wound, or if the place be too high for this, bind on a generous plaster of clayey loam; if this be mixed with cow-dung it will retain its moisture better. If the injury is very severe, grafts must be inserted to establish a connection between the bark below the wound and that above it. Cut incisions with a chisel downwards,

below the wound, and upwards, above it; then take twigs of the same kind of tree of the proper length, sharpen them to a wedge at each end, and insert the ends in the incisions; put grafting wax over the insertions, as in ordinary grafting.

Cions.—Cut, if not already done, and preserved, as mentioned last month on page 8.

Pruning has sufficient said upon it in a special article on page 57. We omitted to mention there that thick white-lead paint is found to answer excellently as a covering for the wounds made in pruning. It may be colored with lamp-black, to make it less conspicuous, or it may be made more like the color of the tree by using amber.

Washing with some alkaline wash is of great benefit to trees, as it removes parasitic growths, loosens old bark scales, and dislodges insects. Home-made soft soap, thinned with water, and put on with a brush, is one of the best applications, or a moderately strong lye of potash or soda-ash may be used. The effect is more satisfactory if the wash is used during a damp spell.

Insects.—Remove all eggs of the tent-caterpillar before they hatch. Canker-worms, or rather the insects of which they are the larva, come out of the ground as soon as it thaws. The females are wingless, and must crawl up the trees, and upon this fact all the preventives depend. We have given some of these. Whatever places an impassable barrier to the ascent of the insect, without injury to the tree, will answer. See several articles upon the canker-worm in last volume.

Fruit Garden.

Do all preparatory work that the weather will allow; see under Orchard for sundry hints.

Blackberries and Raspberries should be planted as soon as the ground can be worked, as they start very early; the shoots will be much broken in handling them if delayed until they have pushed.

Dwarf Trees—and none others should be in the fruit garden—may have the general care given to trees in the orchard; being small, they are more accessible, and it is inexcusable to neglect them.

Strawberries.—Some good cultivators prefer to set them as soon as the frost is out of the ground, while others prefer to wait until later.

Grape-vines which were neglected may be pruned in mild weather. Cuttings made from wood that has been exposed all winter do not usually succeed so well as from that cut in the fall and properly cared for during the winter.

Kitchen Garden.

The main consideration just now is manure, which will soon be needed, not only for enriching the land but for hot-beds. In our brief space we must confine ourselves to the family garden; those who propose growing vegetables for market should have Mr. Henderson's "Gardening for Profit."

Manure.—The heaps should not be so small as to freeze, and when the heat increases so as to cause an issue of steam from the heap it should be forked over, and watered, if dry enough to need it.

Cold Frames are treated of on page 59.

Hot-beds are best left until next month, unless in the Southern States, when they may be started, and Egg Plant, Tomato, etc., sown in them.

Straw Mats are almost indispensable when glass is used over hot-beds or cold frames, and come in play in various ways, in protecting plants from the effects of frost and sun. Brief directions for making them were given last month.

Brush and Poles.—Whatever supports of these kinds will be needed should be gathered before the leaves start, and made ready for use. When material is scarce it will pay to char the ends of the poles; treated in this way, and housed as soon as out of use, poles will last several years.

Peas.—If the soil is in a condition to allow of planting, a row may be risked in a sheltered place; keep the ground warm by laying boards over the row at night. When the plants come up they may be protected by placing the boards upon bricks or other supports. This, of course, will only pay for those who wish to be a little earlier than others.

Potatoes may be forwarded by a similar treatment.

Plant some early sort as soon as the frost will allow, and have some litter at hand to draw over them when there are frosty nights.

Parsnips, Salsify and Horseradish.—Dig for use or for market as soon as the ground is thawed.

Rhubarb.—Those who have a green-house can readily force a few plants by taking up the roots during a thaw, and setting them in boxes of earth under the stage of a green-house. The same thing can be done by placing the roots in a barrel in a warm room; or cover a few roots with boxes or barrels, and place over them a heap of fermenting manure.

Seeds.—Order long before they are wanted for sowing, as the supply will be better, and there is time for testing the vitality of doubtful ones, as directed in last month's notes.

Flower Garden and Lawn.

Last month we advised making a plan for all improvements, and it cannot be delayed much longer. The plan given on page 60 will afford some excellent hints as to the management of a small place. There will be many who, with a small piece of ground, would prefer to have more in vegetable and fruit garden than is there given. In the border and beds in the lawn, plan to have the planting different this year from what it was last.

Cannas are among the most pleasing plants for beds upon the lawn, and we fully agree with what is said by M. Jean Sisley on page 57. Roots are sold by the florists, or the plants may be raised from seed, which had better be started in a hot-bed.

Deciduous Trees.—Those used for ornament should have the same care in giving needed pruning and manuring as those grown for fruit. Do not prune such trees out of their natural shape.

Planting of Trees and Shrubs is to be done under the conditions given for trees in the orchard.

Shrubs.—The pruning of these should not be done indiscriminately. An observer will notice that some shrubs have their flower-buds ready formed; to remove these by shortening the branches would destroy the bloom for the coming season. Others produce flowers from the new wood which will grow next spring; shrubs like these will flower more strongly if well cut back.

Pits or Cold Frames.—The increasing heat of the sun will start plants in these into growth unless they are freely aired. They need to be kept quiet until the season is more advanced.

Lawns.—Wherever the frost is out of the ground roll the grass, and dress with compost or bone-dust, provided it was not manured in autumn.

Repairs to wood-work of all kinds, and painting, are best done now. Paint trellises, and other work needing it, using drab or some other subdued color in preference to glaring white or green. Rustic work should have one or more coats of oil.

Green-house and Window Plants.

Plants coming into flower need more water and a place nearer the glass. Prolong the bloom by shading from the hot sun in the middle of the day.

Annuals may be sown in the green-house, but it is a month too early where it is done in the window. In either case boxes are better than pots.

Bulbs in pots, as they go out of flower, should have the flower-stalk cut away and the leaves kept growing until they naturally decay. Bulbs grown in glasses of water are not worth anything afterwards; those forced in pots will do to turn out into the garden as soon as the frost is out.

Air is to be given whenever the weather will allow.

Dust.—Mild days will allow window plants to be taken outside for a thorough showering; where this cannot be done with safety a bath-tub or sink will serve a good turn. Lay the plants on the side, when it can be done without injury, and shower from a watering-pot with a fine rose; in this way both sides of the leaves will be washed.

Propagating of bedding plants will now occupy attention. The secret of success is to have the temperature of the house lower than that of the cutting bench. Every one who wishes to propagate plants to any extent should consult Henderson's new work, called Practical Floriculture.

AMERICAN AGRICULTURIST.

ORANGE JUDG & Co., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies: Four to nine copies, \$1.25 each; Ten to nineteen copies, \$1.20 each; Twenty copies and upwards, \$1 each. Papers are addressed to each name.

TWO HARVESTS IN WINTER.

Nearly all the Editors and Publishers, and many of the clerks and employees in this Office, know by experience a good deal about the hurry and drive of the haying and harvest season on the farm. They are now experiencing, as never before, what a real Winter Harvest in the city means—that is, on the plot of ground at 245 Broadway. Take, for example, ten days past: The Record Book shows that in these ten days they have gathered, assorted, bound in sheaves (P. O. clubs), and arranged the names, post-office address, date of beginning and ending, etc., of 23,480 different subscribers! This is over three a minute for twelve hours each day, or two-and-a-half a minute for sixteen hours a day—about the time all have had to work. One day the mails brought in 3,365 names, or nearly five a minute for twelve hours! Other days for many weeks have been proportionately brisk. Every name has been entered on the day of its arrival, and, within two days after, copies of our beautiful January number for each have been entrusted to our good "Uncle Sam," properly directed for delivery—all over the country. ... This unprecedented expansion of the circulation of the Agriculturist is exceedingly pleasant to both Publishers and Editors—in a triple sense. It tells them their efforts are appreciated by their friends, viz. the whole people of America and beyond (for example: 100 subscribers in a club from the Sandwich Islands, 72 in a club from Bermuda, and large lists from many foreign lands); it supplies funds, and confidence, for increased effort and expense upon the paper for the future; and it is a pleasure to think that there are so many new homes where the paper will carry pleasure and instruction during all this year. We firmly believe that every reader will be directly or indirectly benefited in heart and mind, and we hope in the end pecuniarily benefited. So, with all its hurry and work, our harvest season is a very pleasant one indeed, aside from any profit. But a very large number of

our READERS have

a rich harvest also. The splendid Premiums that go out daily from our Office cannot fail to please the recipients. The table in the third column gives the names of the good things we are sending out as presents to those who gather and forward lists of subscribers; and everything there named is good and desirable.—Our letter files give many almost wonderful accounts of the speedy manner in which our subscribers have secured coveted premiums. Many and the people all ready and waiting to give in their names. Probably a thousand persons have taken premiums, worth, on an average, \$12 each, which have not cost over six or seven hours' time—giving them \$2 an hour. Others have even made \$5 an hour in canvassing. Others have done poorly at first, but, by perseverance, have come out splendidly in the end. One lady has alone earned over \$2,000 since the middle of September. Others have made large sums, and are adding daily. ... But aside from the many cases of large success, there is abundant

OPPORTUNITY

for smaller clubs, bringing premiums of \$10, \$20, or \$50 in value. The book and other premiums range even smaller. Many keep the matter in hand from day to day and week to week, adding names as opportunity occurs, without devoting any time specially to the business, and thus gradually accumulate names enough to get an article of considerable value. The fact is, there are persons enough at every post-office who need this journal, who would be greatly benefited by it, and who would take it if properly presented to them and its value and usefulness impressed upon them. We desire by the offer of these fine premiums to have this done by some one; and one or more persons at every post-office in America, and many beyond our shores, may now go to work and secure a very desirable premium

IN FEBRUARY

by a very little effort. It is the reading month of the year. The past year's work is finished, and people are looking ahead, laying out plans for the next active season. They want every help possible. A single hint will very often lead one's thoughts into a channel that will terminate in success, when without this hint his mind would have run in an entirely different direction. Successful labor is only the carrying out of well-conceived plans and modes of operations. In the aggregate, untold millions of dollars have been secured by our readers alone, simply from hints and suggestions they have derived from the pages of the Agriculturist during the past twenty-seven years. We know many persons can themselves readily tell what particular hint gave their minds the direction they took,

FOR A VERY

great number have written us, tracing their success with a crop, or in a business enterprise, to some idea thrown out in these pages. The more any man reads and thinks—and the more he reads the more he will think—the more will his head help his hands and his muscles. So we say to every kind-hearted person, who desires the prosperity of his neighbors, get them all to reading, as much as possible—not trashy novels or fictitious stories that merely lull the mind, or instill false and visionary notions—but reading matter that will awaken thought, that will stir up the reasoning faculties, lead to investigation, and afford practical information.... Such reading matter abounds in the Agriculturist, and NOW, in this month of February, is a good time to do something toward getting people to read. To stimulate efforts in this direction, we offer good articles as tokens or prizes. Many are getting them, and they are thus enjoying A

RICH HARVEST,

and we invite YOU, Reader, to go into the field and gather a sheaf. There is abundant room. There are a million families yet to be supplied with the Agriculturist, many of them residing near you, and we give plenty of time to fill up lists already under way, and to start and fill up new premium clubs. Read the list in the next column; also the Descriptive List, which we will send to all applicants not having it already. Choose the article most desired, and a few odd hours will secure it. Try it—to-day,

[In this table are given the regular cash prices of each article, and the number of subscribers required at \$1.50 a year, to get it free, also at the lowest club rate of \$1 a year. For full descriptions of the articles see extra sheets, sent free.]

Table of Premiums and Terms, For Volume 28—(1869).

Table with 4 columns: No., Names of Premium Articles, Price of Premiums, and Number of Subscribers required. Lists items like 'Short-horn Bull', 'Sewing Machine', 'Piano', etc., with their respective prices and subscriber requirements.

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-two Premiums, Nos. 29, 30, 31, 61, 62, 63, 64, and 76 to 100 inclusive, will each be delivered FREE of all charges, by mail or express, (at the Post-office or express office nearest recipient), to any place in the United States or Territories. —The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance specified.

Read and carefully Note the following: (a) Get subscribers anywhere; all sent by one person count together, though from one or a dozen different Post-offices. Bat....(b) Say with each name or list of names sent, that it is for a premium list, and we will so record it....(c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at

once. Any time, from one to three months, will be allowed to fill up your list as large as you may desire. The premium will be paid whenever you call for it....(d) Send the exact money with each list of names, so that there may be no confusion of money accounts....(e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer the premiums....(f) Specimen Numbers, Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, for every extra copy of the paper costs, with the 2c. prepaid postage, about 12 cents....(g) Remit money in Checks on New York Banks or Bankers payable to order of Orange Judd & Co., or send Post-Office Money Orders. If neither of these is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

If from any Cause one fails to get the larger premium desired, the names can be used for a smaller one.

A Full Description of the Premiums is given on an extra sheet; a copy will be sent free to every one desiring it. For New Premium 106, see page 32, last month. We have only room here for the following:

No. 42—Clothes-Wringing Machine. A very useful, time-saving, strength-saving, clothes-wringing implement, that should be in every family. The wringing of clothes by hand is hard upon the hands, arms, and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the garments.

Nos. 76 to 81—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-seventh Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are put up in clean numbers, with full Index to each volume.—They are profusely illustrated, the Engravings used in them having alone cost about \$40,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from 16 to 27.

Nos. 82 to 87—Bound Volumes of Agriculturist.—These are the same as Nos. 76 to 81 above, but are neatly bound in uniform style, and cost us more for the binding and postage. Sent post-paid.

Nos. 88 to 99—GOOD LIBRARIES.—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any one of the premiums 88 to 99 may select any books desired from the list on page 73, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post-Office, or Express office, as we may find it most convenient to send them.

No. 100—General Book Premium.—Any one not desiring the specific Book premiums, 88 to 99, may select Books from list on page 73, to the amount of 10 cents' worth for each subscriber sent at \$1; or 30 cents for each name sent at the (ten) club price of \$1.30 each; or 60 cents' worth for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

A Few Dollars' worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to make their heads help their hands. Any good book will, in the end, be of far more value to a youth than to have an extra acre of land on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres than he would off from 50 acres without the mental ability which reading will give him. Far better to sell the acre of land, than do without the books. Several good books are announced in the Advertising columns, and in the list on page 73.

No. 106—Pocket Rifle.—(Breach Loading).—A full description of this beautiful implement, with illustrations, was given on page 32, last number. No one who enjoys shooting, or who has occasion to carry a light but effective weapon in traveling or while at work, will regret the trouble required to gather the 24 (or 18) subscribers required to secure this weapon free. If any one does not care for the mahogany case, we will present the weapon all complete, with 100 cartridges, on receipt of 18 subscribers for 1869 at \$1.50 each. In this case, it will be packed in a strong pasteboard box, neatly papered,

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for the month ending Jan. 14, 1869, and for the corresponding month last year; also for the year ending Dec. 31.

1. TRANSACTIONS AT THE NEW-YORK MARKETS. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 20 days this m'th. 179,000 324,000 378,500 3,900 27,000 36,000 26 days last m'th. 438,000 3,297,000 988,500 241,000 731,000 2,366,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats. 20 days this m'th. 241,000 1,052,500 1,497,000 163,000 185,000 910,000 26 days last m'th. 359,000 1,736,000 1,639,000 201,000 268,000 2,710,000

2. Comparison with same period at this time last year. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 20 days 1868. 179,000 324,000 378,500 3,900 27,000 36,000 24 days 1867. 372,500 811,000 708,000 48,000 333,000 498,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats. 20 days 1868. 241,000 1,052,500 1,497,000 163,000 185,000 910,000 24 days 1867. 315,000 1,013,000 1,426,000 91,000 724,000 1,617,000

3. Exports from New York, Jan. 1 to Jan. 14: Flour, Wheat, Corn, Rye, Barley, Oats. 1869. 36,914 131,992 214,250 7,800 1868. 29,860 59,670 300,987 1,074

4. Stock of grain in store at New York: Wheat, Corn, Rye, Barley, Oats, Malt. 1869. Jan. 13. 3,534,172 1,509,233 263,360 54,710 2,864,354 236,001 1868. Dec. 11. 3,175,544 2,005,819 287,101 342,921 8,044,591 90,526 Nov. 10. 1,831,057 2,773,309 123,248 371,055 2,082,793 23,691 Oct. 12. 483,006 2,508,744 31,825 22,026 1,393,936 50,631 Sept. 9. 245,349 2,143,500 16,990 256,427 97,094 Aug. 11. 585,370 1,611,468 675 489,100 12,995 July 13. 392,919 1,404,412 28,897 575 780,835 57,138 June 10. 1,576,797 1,326,711 51,460 575 527,364 11,265 May 12. 579,842 1,039,621 33,341 493,494 8,705 Apr. 13. 686,630 1,238,259 8,276 13,235 894,190 Mar. 10. 1,175,152 1,719,822 43,542 46,614 1,794,242 34,102 Feb. 11. 1,501,679 1,705,380 182,111 93,032 1,234,191 65,237 Jan. 13. 1,644,418 1,434,553 189,330 161,313 2,379,826 69,339

5. Receipts of Breadstuffs in New York in each of the last six years: Flour, Wheat, Corn, Rye, Barley, Oats. 1868. 2,800,736 12,988,147 19,053,615 773,351 2,853,043 10,231,590 1867. 2,602,392 9,540,131 14,972,277 765,576 2,669,724 8,008,807 1866. 2,720,835 9,729,912 22,189,532 1,814,943 5,695,485 8,111,064 1865. 3,628,526 8,768,929 15,935,277 899,679 8,239,054 9,851,955 1864. 3,967,717 13,453,136 7,164,895 491,915 2,544,891 19,222,238 1863. 4,574,059 19,937,356 14,334,899 439,567 2,145,485 11,016,035

6. Exports from New York during each of 10 years past: Flour, Wheat, Corn, Rye, Barley, Oats, bush. 1868. 1,020,522 5,775,109 6,002,285 153,093 1867. 867,122 4,450,963 7,081,748 454,006 886,863 120,195 1866. 900,084 522,669 11,079,394 248,643 1,329,842 1,100,583 1865. 1,402,144 3,327,929 4,439,610 198,348 1864. 1,915,392 9,340,433 946,821 588 150 42,435 1863. 2,720,835 12,924,859 7,523,431 416,399 52,439 126,556 1862. 2,961,518 25,264,755 12,039,848 1,041,549 42,061 210,669 1861. 3,110,340 28,896,314 12,889,550 1,000,405 3,927 160,825 1860. 1,626,202 13,538,039 4,087,082 450 8,160 103,076 1859. 1,038,516 297,587 497,886 450 6,550 2,568

7. Comparative Stock of Flour in New York, Jan. 1: Western and State Flour, bbls. 630,357 482,294 435,173 Canadian Flour, bbls. 3,200 830 5,800 Southern Flour, bbls. 17,859 25,459 30,601

8. Comparative Stock of Grain in New York, Jan. 1: 1866. 1867. 1868. 1869. Wheat, bush. 2,910,108 2,678,511 1,908,940 4,023,065 Corn, " 4,501,764 4,715,908 1,574,960 2,064,079 Rye, " 518,448 777,828 202,160 296,443 Barley, " 1,009,837 2,540,525 393,820 647,459 Oats, " 2,216,852 3,479,384 2,805,000 3,213,338

9. Receipts of Breadstuffs at Albany, by the New York Canals, in each of the last nine years: Flour, Wheat, Corn, Rye, Barley, Oats, bush. 1860. 1,149,100 11,176,000 14,155,500 322,100 2,867,600 6,490,000 1861. 1,493,338 30,886,687 22,342,354 832,792 2,235,850 5,948,358 1862. 1,836,669 32,667,866 23,809,882 748,897 2,262,639 5,990,038 1863. 1,560,800 22,306,900 20,608,600 470,509 3,100,500 12,438,500 1864. 1,483,300 15,465,600 10,832,400 620,300 2,465,900 12,177,500 1865. 1,014,000 10,579,200 16,639,900 1,251,900 4,551,600 10,841,500 1866. 570,700 7,684,200 26,516,500 1,749,500 7,440,800 11,220,900 1867. 410,100 9,166,100 15,495,800 890,300 3,866,100 8,841,600 1868. 467,900 14,085,300 16,900,400 869,500 6,328,300 12,184,900

Gold has been quite firm, closing at 137 3/4. Breadstuffs have been in much less request, both for home use and export, at reduced prices. The activity and stringency in the money market have operated very severely against sellers of both Produce and Merchandise, and particularly of Flour and Grain. The available supplies have been liberal, and holders have been more willing to meet the demand, at the ruling figures. The tendency at the close is downward, in most instances.... A brisk speculation has been in progress in Provisions, chiefly in Hog products, prices of which have been advanced sharply, to the detriment of regular trade. This speculation has been based on short crop estimates.... In Cotton, also, the transactions have been very extensive, largely on speculative account, at advanced rates,.... Wool has been in fair demand and held with increas-

ing confidence. The stock of domestic here on the 1st inst. was 7,330,000 lbs., and of foreign, 14,902,500 lbs.... Hay, Seeds, and Tobacco, have been more sought after, closing buoyantly.... Hops and Rice have been inactive.

CURRENT WHOLESALE PRICES. Dec. 15. Jan. 14.

PRICE OF GOLD 135 1/2 135 3/4 FLOUR—Super to Extra State 6 05 @ 8 40 \$5 75 @ 7 75 Super to Extra Southern. 7 00 @ 14 50 6 35 @ 14 25 Extra Western 7 20 @ 14 25 6 35 @ 13 75 Extra Genesee. 8 50 @ 11 75 7 75 @ 11 25 Superfine Western 6 05 @ 6 63 5 75 @ 6 25 RYE FLOUR. 6 50 @ 8 50 5 50 @ 7 75 CORN MEAL. 4 65 @ 5 75 4 25 @ 5 25 All kinds of Red and Amber. 2 10 @ 2 40 2 00 @ 2 30 CORN—Yellow 1 05 @ 1 18 95 @ 1 20 Mixed 1 05 @ 1 16 90 @ 1 10 OATS—Western 77 @ 79 76 @ 78 1/2 State 79 1/2 @ — Nominal. RYE 1 48 @ 1 85 1 48 @ 1 55 BARLEY 2 00 @ 2 30 2 00 @ 2 20 HAY—Baic per 100 lbs. 75 @ 85 73 @ 82 LOOSE 85 @ 1 45 80 @ 1 30 STRAW, per 100 lbs. 90 @ 1 15 1 00 @ 1 25 COTTON—Middle, per lb. 25 1/2 @ 26 29 1/2 @ 29 1/2 HOPS—Crop of 1868, per lb. 10 @ 20 6 @ 15 FEATHERS—Live Geese, per lb. 75 @ 85 75 @ 85 SEGO—Clover, per lb. 12 1/2 @ 12 1/2 Timothy, per bushel. 3 00 @ — 3 00 @ 3 25 Flax, per bushel. 2 35 @ 2 50 2 50 @ 2 60 SUGAR—Brown, per lb. 10 1/2 @ 13 1/2 10 1/2 @ 13 1/2 MOLASSES, Cuba, per gal. 35 @ 48 32 @ 48 COFFEE—Rio, (Gold, in bond) — 7 1/2 @ 12 7 1/2 @ 12 1/2 TOBACCO, Kentucky, &c., per lb. — 8 1/2 @ 10 8 1/2 @ 10 1/2 Seed, per lb. — 6 @ 7 6 @ 7 1/2 WOOL—Domestic Fleece, per lb. 46 @ 62 47 @ 62 Domestic, pulled, per lb. 35 @ 50 35 @ 50 California, unwashed, 25 @ 38 20 @ 36 TALLOW, per ton 11 1/2 @ 12 1/2 11 1/2 @ 12 1/2 OIL—Coke, per ton 53 00 @ 60 00 57 00 @ 60 00 PORK—Mess, per barrel 25 00 @ 26 00 25 00 @ 26 00 Prime, per barrel 19 50 @ 21 00 21 00 @ 25 25 BEEF—Plain mess, 9 00 @ 16 50 9 00 @ 16 50 LARD, in trcs. & barrels, per lb. 15 1/2 @ 16 1/2 15 1/2 @ 16 1/2 BUTTER—Western, per lb. 25 @ 28 25 @ 40 CHEESE, per lb. 35 @ 50 35 @ 48 BRANS—per bushel. Nominal. \$ 25 @ 4 25 PRAS—Canada, in bond, per lb. 1 35 @ — 1 40 @ — EGGS—Fresh, per dozen 37 @ 42 36 @ 41 POULTRY—Poultry, per lb. 10 @ 12 13 @ 18 TURKEYS, per lb. 10 @ 12 13 @ 18 POTATOES, new, per bushel 1 75 @ 3 50 1 50 @ 3 50 APPLES—per barrel. 3 00 @ 4 00 3 00 @ 5 25 SWEET POTATOES, per bbl. 8 50 @ 5 60 6 00 @ 6 60 CRANBERRIES, per barrel 18 00 @ 24 00 16 00 @ 18 00 TURNIPS—per bbl. 2 00 @ 2 25 2 50 @ 3 00 CABBAGES—per 100. 6 00 @ 12 00 12 00 @ 16 00 ONIONS—per bbl. 5 00 @ 6 00 6 00 @ 8 00 GRAPE—per pound 3 @ 15 8 @ 13 VENISON—by the carcass per lb. 11 @ 13 9 @ 11

New York Live Stock Markets.

WEEK ENDING. Bees. Cows. Calves. Sheep. Swine. Tot'l. Dec. 21st. 6,012 61 897 34,978 29,683 70,837 do. 28th. 5,257 52 712 22,575 14,272 40,868 Jan'y 4th. 3,327 53 775 16,705 5,439 26,190 do. 11th. 4,422 100 536 31,070 6,917 45,045

Total for 4 Weeks. 19,018 266 2,820 105,828 148,307 182,935 do. for previous 4 Weeks 24,765 259 4,106 138,013 152,339 306,473

Bees. Cows. Calves. Sheep. Swine. Average per Week. 4,754 66 705 26,332 14,577 do. do. last Month. 6,191 63 1,026 39,503 35,582 do. do. previous Month. 6,233 57 1,335 41,913 28,660 Average per Week, 1868. 5,733 105 1,588 27,182 18,809 do. do. do. 1867. 5,414 64 1,200 20,000 12,603 do. do. do. 1866. 5,748 94 1,200 20,000 15,000 do. do. do. 1865. 5,255 118 1,500 16,691 11,613 do. do. do. 1864. 5,161 145 1,511 15,315 12,676 Total in 1868. 298,128 5,466 82,571 1,413,419 978,061 Total in 1867. 283,852 3,369 69,911 1,174,151 1,162,643 Total in 1866. 298,880 4,387 62,420 1,040,000 672,000 Total in 1865. 270,271 6,161 891 836,733 573,100 Total in 1864. 267,609 7,603 75,621 782,462 660,277

The above table gives the weekly receipts for the four weeks ending Jan. 11th, the total number of all kinds for each week, also the number of each kind for the four weeks, as well as the sum of all kinds for the month.

A steady advance is shown in the total number of animals received in each department for each of the past five years. As compared with other years, 1868 shows the largest numbers. This is to be expected in a market like New York, where the population is steadily increasing, not only in the city proper, but where every year new suburban towns are being built, which depend almost entirely on New York for their supply of food. Very much of the stock now sold in our market finds its way to the country again in the shape of "dressed meats," and it is not unusual to meet purchasers from twenty and thirty miles distant getting their weekly supply.

Beef Cattle.—The market has been unsettled for the past month, an advance in prices one day being marked by a corresponding decline the next. There has been the usual supply of extra beef for Christmas week, some of it selling as high as 20c. @ 21c. per pound. Heavy, very fat steers are not desirable, except in small numbers, and then only to "dress off the stall," as the butchers say. The finest lot in market for Christmas week was eleven head of grade Durhams, fed by Henry Kirk, Ohio. They averaged 2,330 pounds each, live weight, and sold in divided lots to several butchers at 21c. per pound. David Selsor had a drove of thirty-one head, very nearly as fat, which were thought by many to be better bargains at 20c. per pound. Where there are a few lots of very fat stock one is sure to find some very poor; this has been too much the case all the past month, and ordinarily good steers, such as butchers like, were scarce, and sold at an advance of 1/2c. per pound over prices paid

for the same grades last month. The following list gives the range of prices, average price, and figures at which the largest lots were sold:

Dec. 1st ranged 9	@ 30 c. Av. 15c.	Largest sales 14	@ 16
do. 28th do. 11	@ 18½c. do. 15½c.	do. do. 14½	@ 16½
Jan. 1st do. 11	@ 18½c. do. 16½c.	do. do. 15	@ 17
do. 11th do. 10½	@ 18 c. do. 15½c.	do. do. 14½	@ 16½

The light supply for the weeks ending December 28th and January 4th caused an advance in price of 2c. per pound on all grades, and butchers bought sparingly, hoping that a few days would give them more stock and better selections. Stock men, as soon as their droves were sold, hurried to the country for cattle, and fresh arrivals every day up to January 11th crowded the markets, and caused a decline which more than offset the gain of previous weeks, and our report closes with a dull market.

Milk Cows.—The supply previous to the week ending January 11th was small, and good milkers were in fair demand, prices ranging from \$90 to \$100 each, and \$70 to \$80 for ordinary. An increase in the supply made a total of one hundred head in market January 11th, the majority of which were good milkers. This caused a decline in price, and many good cows sold as low as \$80, while ordinary ones remained unsold, or brought only \$50 to \$65.

Calves.—Sales are steady, and the supply too small to make much change in prices. This is the season of small numbers in this department, and such as are fresh, just from the cow, young and fat, bring 12½c. @ 13c. per pound, live weight. **Sheep and Lambs.**—There is but little change to notice here. With the exception of extra Christmas mutton, prices keep about the same. The demand may be said to be only fair for good stock, while poor things sell slowly, at from \$2 to \$5 a head. Prices range at 5c. @ 7c. per pound for good sheep.

Swine.—Very little can be said for Hogs. The arrivals are light, and sell quickly. Prices range from 10c. to 12½c. per pound; fresh dressed, 11½c. @ 12½c.; and Western dressed, fat, 13c. @ 13½c. per pound.



containing a great variety of items, including many good hints and suggestions which are thrown into smaller type and condensed form, for want of space elsewhere.

Mark All Subscriptions sent in, as New or Old.

How to Remit:—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the Registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money and seal the letter in the presence of the postmaster, and take his receipt for it. Letters sent in this way to us are at our risk.

MANY THOUSANDS of people have received the Premiums offered by the Publishers, and a large number of these have written expressing their great gratification, while not one in five hundred has indicated the least dissatisfaction or disappointment. We hope to send out many thousands more of these good articles yet this winter. Human nature and human wants are about the same everywhere, and it will be just as easy for others to get these premiums as for those who have done so. A few get discouraged because not as successful at the first attempt as they hoped to be. Hundreds have written us that it took several trials to "get their hands in," but that by perseverance they were in the end unexpectedly successful. One of our present most successful canvassers, who gets a large salary every year from the sale of premium articles received from this office, failed almost entirely the first week of trial.—Please look through what is said on page 40, and then see what can be done in your neighborhood.

About the Advertisements.—These are doubly advantageous to the reader. Of the income they yield, tens of thousands of dollars are every year expended in getting up and supplying the paper, in addition to all the receipts for subscriptions. We should have to charge about double the present subscription rates, but for the advertising income. Then these pages are very useful as a kind of reliable "Business Directory." They tell what is for sale, by whom, and usually at what

price, and the more there are of them, the better is the opportunity to choose. It is like going to make purchases in a great city. We shut out a much larger class of advertisements than we receive. Humbugs, patent medicines, and those generally who "give little for much," pay publishers the highest prices. Our aim is to live up to one rule, viz: "An advertiser, in order to be advertised here, if unknown to the editors personally or by good repute, must furnish them satisfactory evidence that he has both the ABILITY and INTENTION to do what he promises to do in his advertisement."—By adhering to this rule, we hope to make our business pages doubly valuable to both readers and advertisers. In order that the latter may know how large a class of intelligent, wide-awake people they reach through this paper, we request those sending orders to them, or writing for circulars, etc., to mention where any advertisement was seen.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be prepaid at the Post-office where the paper is received.

Bound Copies of Volume XXVII (1888) are now ready. Price, \$3, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (15 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume, (50 cents extra if returned by mail.) Missing numbers supplied at 12c. each.

Kerosene Murders.—So many have died victims to the frauds in kerosene, that at last one man has been aroused to do something. Coroner Keenan, in holding an inquest upon a death from "accident" by kerosene, had samples of the oil tested. Finding that the oil was nearly pure benzine and would explode at 66 degrees, instead of requiring to be heated to 110 degrees, he had both the vender and manufacturer of the oil arrested and held to await the action of the grand jury. The coroners can take cognizance of the matter only after death has occurred. . . . Since the foregoing was in type, we find that the Board of Health has waked up, after allowing the matter to go unnoticed for several years. It needed a chemist to tell them what every one of the inspectors should have known "of his own knowledge," that almost all the kerosene sold in New York is unsafe, and some of it eminently so. The report of Professor Chandler is very long and interesting; from seventy-eight samples, procured in different parts of the city, not one could be called really safe. One sample contained 90 per cent of benzine, naphtha, etc. A large number of the oils formed an explosive vapor, at considerably below the ordinary temperature of a sitting-room. The wonder is, that so few "accidents" should happen, rather than that there should be so many. Let everybody agitate this matter in his own neighborhood. Good kerosene is to be had, that will not burn below 110 degrees; demand this of the dealers, and it will be supplied.

Sundry Humbugs.—The man who offers "Music Boxes" for a dollar, William Scott, Franklin street, New York, has found one person foolish enough to trust his promises, and who, for one dollar forwarded by mail, received a child's toy known as Harmonicon, a 4 in. by 1 in. tin and wooden instrument, which makes a noise by blowing through holes in the edge of the wood, across the ends of reeds fixed in a plate of zinc—wholesaled at 50c. to 1.50 per doz. . . . Stewart & Smith "offer the public greater inducements than ever before." We should say so. "Elegant gold watch chains" with patent swivel, and all the fixings, for \$3.00 each, not to speak of other things, including brooch and ear-rings with no fewer than twenty-three diamonds, each one of them as big as fat-peas, at \$1.00. Oh! Messrs. Stewart & Smith, how can you! Of course you are the manufacturers, as none others could offer such inducements to purchasers, and you must have learned the art of advertising and of doing business from that "unexplained mystery," Planchette, which you advertise for sale at the low price of \$2.00 each. . . . The "Rev.," J. T. Inman is out with his "noble remedy" for troubles which we will not mention here. Being a "Rev.," J. T. I. has his address at Station D., Bible House. It is well for those out of the city to know that the Bible House rents stores for various purposes, and the P. O., Station D., occupies one of them, but has no connection whatever with the Bible House. . . . Try again, Mr. I., that trick is musty. . . . Chas. J. C. Kline & Co. have been long known as venders of vile things, and we wonder that people will ask if they are honest or honorable. . . . The "American Butter Powder Co." have an agency in Boston. Look out for them. We consider their powders worthless. They now propose to sell them in packages at 50c. @ \$1 each. . . . Parker, Moore & Co.

seem to be managers for the "Metropolitan Gift Co.," at present. This is the only change from the old plan so loudly advertised a few months ago. The whole thing is a swindle. . . . Hunt, Anthony & Co., still hang out at the old number. Let them keep their watches. . . . We are tired of showing up these old concerns. Do try some new dodge. . . . Reed & Co., Bankers, well known to our readers as successors to Geo. A. Cook & Co., of "Soldier's Orphan's Lottery" notoriety (see July No., p. 245, 1868), are now acting as managers and bankers for Wells, James & Co. Strange, so many men need managing, and all by Reed & Co. A few weeks ago Reed & Co. notified one of our readers, Mr. D., that his number had drawn a prize, in this case a watch, and that by forwarding to them the sum of \$9.00, by mail, they would send him the watch, or, if preferred, they would send the same by express, marked C. O. D. The stranger preferred the latter course and left the amount with a friend to pay express charges, should the package ever come. In due time it came and was paid for. Upon opening it no watch at all was found, but a nice parcel of broken brick, whereupon Mr. D. asks us to seek some redress for him. Pretty well done, Mr. Reed; we should say that you are making a good thing of this manager's business. Mr. D. will see no more of his \$9.00 or of Reed & Co., in all probability. We are unable to say where they hold forth at present.

Among the lotteries proper which still flourish are L. D. Sine's Gift Lottery, Cincinnati, and the New York Jeweler's Co-operative Union, Servies & Co.,—both grand humbugs. Derby Athenaeum is a bookstore with a lottery attachment. A person buying a certain amount of books receives a ticket in a drawing of pictures. The selling of tickets is got around in this way, but nevertheless it is a game of chance, and as such is illegal. The tickets are many and the prizes few. Those who do not believe in lotteries at all will have nothing to do with one masked in the manner that this is. . . . Oroide Watches are watches in composition cases, like a nice brass, when well made; and we suppose the works will run just as well as if cased in gold and precious stones, provided the works themselves are good. But there's the rub. A subscriber in Indiana writes that he worked hard to get up a club of 50 subscribers for a journal, with the promise of an Oroide watch as good "for all practical uses as watches worth \$100." But when it came it was "a worthless, cylinder escapement, brass-cased watch, not worth \$5.00." Giving premiums is a good and proper thing, if the premiums are themselves good, and most newspapers, even the old staid religious papers that need to be so dignified, give premiums now; but any publisher who does this ought to be careful not to humbug those who work for him—not even by letting himself be humbugged into the belief that a brass watch is as desirable as a gold one.

Wide-awake Nurserymen.—A list of these will be found in the Horticultural Annual.

The American Pomological Society.—The President, Hon. Marshall P. Wilder, has addressed the following circular to the members of the various committees of the Society:—It having, upon consultation with some of the Fruit Committees, been deemed advisable to hold a special meeting of the officers and committee men of the American Pomological Society, for the purpose of a careful revision of the Catalogue, the undersigned hereby give notice that such meeting will be held on the 10th day of February, 1869, at ten o'clock, A.M., at the rooms of the *Agriculturist*, in the city of New York. It is hoped that every one will recognize the importance of our Fruit Catalogue, and also see the necessity of a special meeting for its revision, and be present thereat, to aid and assist, preparatory to the next session of the Society, to be held in Philadelphia, Sept. 15, 1869. Should it be impossible for any one to attend in person, he is urgently requested to write out his views and opinions, and forward the same to F. R. Elliott, care of Charles Downing, Newburgh, N. Y. Contributions of fruits are also specially invited in aid of the work to be performed. These may be directed to "American Pomological Society, care of ORANGE JUDD & Co., Broadway, New York."

Clubs can at any time be increased, by remitting for each addition the price paid by the original members, if the subscriptions all date at the same starting point. The back numbers will, of course, be sent to added names.

What Evergreens are Hardy?—The experience of Messrs. Samuel B. Parsons and Josiah Hoopes with evergreens in the winter of 1867 and '68 is of great value to tree planters. See Horticultural Annual.

Death of Mr. Affleck.—Mr. Thomas Affleck, formerly of Mississippi and more recently of Bronham, Texas, died early in January last at his residence at the last named place. Mr. Affleck was well known as a writer to various agricultural journals, and in his death Texas loses one of her leading agriculturists.

Good Stock Needs Good Land.

The *Agriculturist* has always advocated the introduction of improved breeds of cattle, sheep, and swine. We know that a well-bred animal is vastly more profitable than common stock. It is just as absurd for a farmer to keep stock that shows no breeding as it is to use a poor scythe instead of a mowing machine. We avail ourselves of skill and thought in the one case. Why not in the other? We have cattle, and sheep, and pigs, that are as superior to common stock as the modern steel plow is superior to a wooden stick, and for the same reason—the thought that has been bestowed upon them. But while this is true, it should never be forgotten that improved stock necessitates an improved system of farming,—the two must go together. We have prepared our friends for the mowing machine. Let us get our farms ready for improved breeds of stock. We shall not attain the best results until this is done.

Does Plaster Lose its Properties by Keeping?

—There is an opinion among farmers that this is the case. We do not see that any change can take place that will lessen the value of the plaster gypsum as manure, and we should have no hesitation in drawing the plaster during good sleighing in the winter, rather than wait until spring, when the roads are bad. We know farmers who draw all their plaster in the winter, and find great advantage in so doing. Keep it dry, and it will be just as good as if obtained fresh from the mill.

Duck Raising.—"H. C. P.," Litchfield Co., Conn.

Less is known about the diseases of ducks than of fowls. They are, in our experience, best hatched by hens and kept in a dry pen for several weeks. Give plenty of grass, frequently renewed, keep water always before them in shallow vessels, and feed often. A pen of boards a foot high, covered with laths nailed across the top, with one corner or one end covered, to exclude rain, is all-sufficient. This pen should be frequently shifted upon dry, grassy ground. If one is noticed moping, swelled up, or out of sorts in any way, give soaked bread and milk, red with Cayenne pepper. The best are Rouens, Aylesburys, and Cayuga Blacks. Points of excellence for common purposes are size and number of eggs.

Destruction of Turkeys by a Fox.

—A fox in Meriden, Ct., has destroyed 80 turkeys the present season, at three farm-houses. This is a loss of at least \$150 from a single worthless animal. In some of the States there is a bounty of one dollar a head upon foxes. Is it not quite time that the bounty was raised, to correspond somewhat with the injury they inflict upon farmers? Five dollars a head would start the hounds after them, and they would soon be exterminated.

Sell when You Can Get a Good Price.

—This should be the farmer's rule. To hold produce in hope of getting extravagant prices may occasionally succeed, but it generally fails. Farmers, by holding back their produce, may help speculators to "form a corner," but the speculators never divide the profits. If you can get a fair price, sell as soon as you are ready. But if an article that you can hold does not bring a fair price—if it is below the cost of production—do not dispose of it. It will certainly rise. We know that there are few things that make a farmer "feel so bad" as to find that if he had held his produce a few weeks he could have got a much higher price. We know farmers who sold their barley last fall at \$1.50, and their wheat at \$2.25; while some of their neighbors held both, and sold the barley for \$2.10, and have their wheat still on hand. Now it is not pleasant to think that you could have got 60 cents a bushel more for the barley, but then there is some consolation in thinking that you got 50 cents a bushel more for the wheat than you could get now. We once crossed the Atlantic with a well-known captain in a sailing vessel. Another equally celebrated captain left Liverpool on the same day. When we took in the pilot, the first question the captain asked was: "Any news of the New World?" "She reached New York three days ago." We all "felt as bad" at being beaten as the farmer who sold his barley at \$1.50. But our captain remarked: "He must have taken the southern course. He has hit it for once. But it is wrong, nevertheless." So we say to the farmer who got \$2.10 for his barley. He hit it for once. But the principle is wrong. Better to sell when you are offered a fair price. This same farmer had some capital hogs. They were very fat, and he was offered 13½ cents for them. He kept them three weeks longer, and then sold them for 10½ cents.

Potatoes on Spring-turned Sod.

—A correspondent residing in Washington County, Ohio, writes as follows: "After many years' experience I prefer sod for potatoes, avoiding heavy clays. Plow as early in

April as the ground is in order, harrow thoroughly and plant in hills, cultivate thoroughly both ways and often until they bloom, then quit. I mature with coarse manure before plowing or with fine after, and never fail."—We have no doubt the practice is good, although to secure thorough rotting of the sod and destruction of weeds, we advise plowing in August; yet it depends very much upon the kinds of grass and weeds in the soil, and upon the mode of plowing and strength of the soil.

The American Jersey Cattle Club.

—The prominent breeders of Jersey (or Alderney) cattle in this country have associated themselves together under the above title, for the purpose of fostering the interests of the breed, and for the preparation and publication of a careful Herd-book, or record of pedigrees. The type of this breed is so strongly fixed, and the bulls usually mark their progeny so strongly, that seven-eighths, or even three quarters bred grade animals have often been palmed off upon unsuspecting purchasers as pure bred, and sold at correspondingly high prices. It is one of the chief purposes of the Club to render such jockeying impossible in future. The Club itself is a close corporation—none but breeders of established reliability being admitted to membership—but its Herd-book is open to the general public, and all pedigrees can be entered which meet the unanimous approval of the Executive Committee, which is composed of the following persons:—President, Samuel J. Sharpless, St. Road Station, Chester Co., Penn.; Treasurer, Thos. J. Hand, Sing Sing, N. Y.; Secretary, Geo. E. Waring, Jr., Newport, R. I. Additional members—Thos. Motley, Jamaica Plain, Mass.; S. W. Robbins, Wethersfield, Conn., and John Glenn, Baltimore, Md. Information concerning the Club can be obtained from the Secretary or Treasurer.

"A Cow Gives Richer Milk when Fat than when Poor."

—Such is one of the conclusions arrived at by Mr. Clarke from his experiments. (See *Agriculturist* for Dec. 1868, p. 441). There are fat cows that give poor milk, and not much of it. In fact, this is one reason why they get fat. The food goes to form flesh and fat, instead of cheese and butter. The trouble is in the cow and not in her condition. If she was poor in flesh she would give no more or richer milk, and yet there are farmers who think otherwise. If a cow is fat, they conclude that she must be a poor milker—and there is some truth in the idea. If a cow keeps fat all through the summer, while she is giving milk, on ordinary food, she is a poor milker, or else she gives poor milk. So far the popular notion is correct. But it is very absurd to condemn a new milch cow because she is fat. If she is to give large quantities of rich milk she must be fat. It is a monstrous perversion of an acknowledged truth, that because a "deep milker" is seldom very fat we must therefore try to keep our cows thin, in order to make them good milkers. There are thousands of farmers who fall into this error. They mistake the effect for the cause.

Is our Wheat Land Running Out?

—We think not. There are farmers who raise as much wheat per acre as they ever did. They have no better land than their neighbors. There is no difference, except that they farm better. We may not be able to raise wheat as easily as when the land was new and full of organic matter from the decay of leaves. But if more labor is required, we get a more than corresponding increase in price. So that, in point of fact, farmers are better off than formerly. Our mistake is in trying to raise wheat with as little preparation as when the land was new. The farmer who underdrains his land, works it thoroughly, and keeps it clean, who makes rich manure and does not crop his land too frequently, can raise as much wheat per acre as he ever could. There can be no doubt on this point. We are confident that such farming will pay—and at all events, if it will not pay, poor farming certainly will not. We never heard of a case where good farming failed to afford handsome profits.

"All the Fat Goes into the Pail."

—This truth cannot be too often repeated. A cow that is a good milker should be fed liberally, not only while she is giving milk, but while she is dry. All the fat she accumulates before she calves will find its way to the pail during the summer. There is no period at which a cow lays on fat so rapidly as before she calves, provided she has food enough. It is a wise provision of nature. And yet many farmers feed nothing but straw and cornstalks at this period. Because the cow is not giving milk they think it will not pay to supply more food than is necessary to sustain life. Frequently the poor cows are not even provided with shelter from the storm. And it is a mystery how they manage to digest straw enough to keep up their animal heat. No wonder that many of them have to be "lifted" in the spring. There is nothing that pays so well as good shelter and good feed for cows dur-

ing winter, whether they are giving milk or not. Every pound of fat stored up before calving will, if the cow is a good milker, find its way to the pail during the summer. And a pound of tallow will make more than a pound of butter, because the former contains little or no water, while butter contains from 15 to 20 per cent.

Milk Fever.—Cows that are well fed and get fat sometimes die of milk fever. Alas! that it should be so, for it is used as an argument against providing the most useful of all our domestic animals with the necessary care and food during the most interesting and important period of her history. The truth of the matter seems to be this: cows that are poorly fed get accustomed to this condition. They eat little, and give little milk. Cows accustomed to an abundance of food adapt themselves to this condition. They will eat a good deal, and give a good deal of rich milk; or, if bred for the purpose, will gain rapidly in flesh. Such a cow will suffer more from poor feeding than the other, while the latter may be injured from high feeding. It is a matter of fact that dairies of such cows, when fed on rich food, have many cases of milk fever, while dairies of grade Short-horns, in similar circumstances, are generally exempt. We should adapt the feeding to the breeding, and the breeding to the feeding. We lose half the advantage of high feeding unless we have the right kind of animals, and we lose all the advantage of good animals unless we give them good food and good treatment.

Subsoiling.—"N. D.," Lyon, Ct.

"I see a great deal in the papers about subsoiling. Is it beneficial for all lands? I have tried it on one piece, and could not see any difference."—The object of subsoiling is to loosen the soil beyond the reach of the plow, and thus subject it to the action of the air, allow the roots to go down, and the moisture to come up. If the subsoil is a loose gravel, allowing a free circulating air, there is no use for the subsoil plow. If it contains substances injurious to plants, the first crop would probably be injured by the loosening. If it is so wet that the roots of plants cannot go down into it, it would not be worth while to subsoil it. Well-drained lands are most benefited by the operation, and it is rare to find soils of this character that will not pay well for subsoiling. It is easy to subsoil in a few furrows, and by comparing the crop with that of land not thus treated, you can determine if this operation will pay.

The Department of Agriculture.

—The N. Y. Times has a growl at Commissioner Capron, and the N. Y. Sun follows it up with a proposition to abolish the Department altogether. It may be that one of the Times people did not have a job on the annual report this year, which would account for the course of that paper. But we are at a loss to account for the course of the progressive Sun. We would suggest to these sheets that the Agricultural Press feels quite competent to take charge of this matter, and removal in another manner only prevented its influence from displacing the former Commissioner. The agriculturists, through their own papers, will speak when they are dissatisfied with the present Commissioner, and then he will have to go, and all the *Suns* and *Timeses* will not hasten or retard it. This is a matter in which farmers have a word to say, and politicians very little. We have no other interest in the matter than that Col. Capron shall have a fair trial. It is not fair to expect that one coming into the control of a thoroughly disorganized department should immediately make the change felt. We think that the plans of the Commissioner are such as will meet the approval of intelligent agriculturists, and they are the only ones individually concerned. The Times thinks the monthly reports of no value; others think differently. The Sun would abolish the Department on the score of economy; we go for ample appropriations. If the Sun wishes to economize, we can show it a place to begin. There is a concern called the Botanical Garden, which is a very high sounding name; some \$50,000 are being expended for a new glass structure, and round sums are yearly paid for keeping up the establishment. We last fall went among the plants which are to go into this costly house. There were a few rare specimens, but the principal stock was just such as a regular florist would keep for cut flowers—*Heliotropes*, *Bonvardias*, and all such stuff in great quantities. Now this Botanical Garden is just a contrivance for furnishing the wives of Senators and Members flowers at public expense. The wife of one Senator had last winter thirty-nine bouquets from this establishment for one party. This concern is in no manner connected with the Agricultural Department, nor do the Agricultural Press recognize it, and if outsiders wish to pitch into something, here is a chance. We intend that the Department shall be sustained, and that liberally, and if Col. Capron is not the man to run it, we shall keep trying until the right one is found.

New Coluses.—A few days ago we saw at Peter Henderson's small specimens of some of the new varieties of Coluses, about which so much talk has been made abroad. The leaves are beautifully and curiously variegated, while the colors are of different shades from anything we have had before. They are pretty as pot plants, but it will require an open air exposure during one of our hot summers to determine their real value.

The New Vegetables.—Mr. Gregory, Mr. Henderson, and others, give their experience with the new vegetables in our Horticultural Annual.

Where Shall I Go?—We have a number of letters asking advice as to whether the writers had better move to this place or that. A little reflection will show that it is quite impracticable to give advice in such cases. Some men will flourish where others would starve, and it is difficult to put such under circumstances where they will not make a living. Others would be "ne'er do wells" if they had a farm given to them in the most fertile region, ready stocked with all that is needed for its best cultivation. Unless one has made up his mind to be a "mover," as they say out West, *i. e.*, put all his worldly goods and family into a wagon, and travel until he finds a place to suit him, he had better make a visit to the place first. It will be money and time well invested. Many inquiries are made about Vineland, N. J., and similar land speculations. We can only say about these, that we know some who have settled in such places and are quite content with their lot, and others who have left in disgust. Success anywhere depends quite as much upon the man as upon the place.

Glanders in the Human Subject.—The medical journals report the case of Mr. Eli Townsend, Montgomery, Ala., who treated a horse having the glanders. Mr. Townsend had, at the time, a scratch upon one of his hands, through which his system became inoculated with the poison, and after great suffering, he died in fifteen days from the beginning of the attack. A similar case has recently occurred in the City of New York, where the disease is very prevalent among horses.

Seeding Grass Land.—"C. J. H." of Rock Dell, Minnesota, writes: "I have a piece of land which I wish to seed down next spring to clover for pasture. The land is plowed, and I want to put on oats. Will oats and clover grow together, or shall I put on red top and timothy?"—It is a common practice to seed land to grass and clover with oats in the spring. The clover has the ground the second year, and the grasses the third and subsequent years. A pound of white clover seed to the acre would be a good addition to the red clover and the grass seed. It is best to substitute blue grass for timothy, if the object is to make a permanent pasture.

Mule Market.—"E. H. F. S." Gorham, Me.—You will generally find mules at the horse markets in the large cities, at prices from \$300 to \$600 a pair, according to size and quality.

California Plants.—W. S. Jacks, of Napa Valley, will please accept our thanks. We went through the beautiful Napa Valley when the settlers were few and far between; while there we discovered a Dutchman's Pipe which was undescribed. We alluded to it in an article upon the Dutchman's Pipe of the East, and Mr. J. took the pains to send us plants by a friend who was coming East. The plants on the passage made an unnatural growth, and arriving here at a cold season the shock was too much for them. Upon learning this Mr. J. sends us cuttings by mail. These, though rather dry when they reached us, we hope to start.

Tile Factories.—"G. C." Staunton, Va., writes: "If the tile makers can't afford to advertise in this section, will you be so charitable as to recommend some of them to us? The farmers of my neighborhood wish to combine to get a supply of tiles, but so far have found no advertisement."—There are large tile factories at Albany, N. Y., and at Woodbridge, N. J., both points from which tiles could be easily shipped to the seaports of Virginia. Probably it will be cheaper for you to import a tile maker and machinery than tiles. Most of the tiles laid in England are made upon the estates where used. A very large item in the expense of draining is the transportation of tiles, and this would be quite heavy from the seaboard to your place. C. W. Boynton, Woodbridge, N. J., would probably give you the needed information about tiles, and the way to make them.

Devon Herd-books.—The first Devon Herd-book was published in England in 1851, by John Tanner Davy, of England, and contained only the animals of British breeders. The second volume appeared in

1854, and was edited by Mr. Davy and by Mr. Sanford Howard, then of Boston. It contained the names of eighteen American breeders. The third volume appeared in 1859, as an exclusively American Herd-book, being edited by Mr. Howard, while Mr. Davy issued a third English volume on his side of the Atlantic. The Association of Breeders of Thoroughbred Neat Stock published a Herd-book in 1863, edited by Mr. H. M. Sessions, of South Wilbraham, Mass., and a second volume has recently been issued under the auspices of this Association, by the same editor. These two volumes, bound in one, contain a History of the Devons, Points of excellence in Bulls and in Cows, the pedigrees of 1,171 animals, and (not the least valuable portion of the work), a Directory in the second volume to the names and addresses of one hundred and fifty breeders residing in twenty-one States. The editor, one of the most successful breeders of the country, assumed the pecuniary responsibility, we believe, of the publication of this volume, and it may be obtained by addressing him. The Devons are one of our most useful breeds, and pre-eminently combine most of the desirable and valuable qualities—beef, labor, milk, hardiness, and ease of keeping.

Early Field Corn.—"Charles Mallory," of Embarrass, Wis., sends us a well-matured ear of variegated flint corn, planted June 21st, and cut September 5th, a period of eleven weeks. This variety will be of great value in the regions of early frosts.

Importation of 25,000 Bushels of German Barley!—The January number of the *Amerikanische Bierbrauer*, the German Brewer's journal of this city, notices the importation of 25,000 bushels of German barley. It weighed eleven pounds to the bushel more than other barley in market, and was eagerly bought up by the best brewers. It was of the two-rowed sort, and we infer its reception was such as to encourage further importations. We raise barley enough to ship a good deal to England, where it brings a poor price compared with their own, and is used for horse-feed. Our brewers are forced to use it because they can get no other, and some (we believe ignorantly) even prefer the four or six-rowed barley to the two-rowed sort. Our barley-raisers may be assured that a much better quality of grain will bring a proportionably higher price, and they will do well to look out early for superior seed.

Seedsmen and Florists.—The Horticultural Annual has a very full list of them.

A Potato Testing.—By a happy conjunction, as the astrologers would say, quite a number of persons interested in potato culture happened to be in New York early in January, and Messrs. B. K. Bliss & Son, the well-known seedsmen, availed themselves of the opportunity to give a potato feast to a party, which included those above referred to and several of the agricultural press. Mr. Bresee was present, and with his new potatoes. Mr. B. is the originator of the Early Rose, and has some new varieties of great promise. Single potatoes of one of his varieties have sold at enormous prices. Of one of these he sold one tuber for \$60. At the feast alluded to, sundry valuable specimens were served, boiled and roasted, but we noticed that calls for a "few raw" were passed unheeded. We cannot give a full report of the discussion, which elicited a great many valuable facts, but briefly give the results. Of the specimens tested, the Early Rose was unanimously declared the best; Bresee's Prolific stood No. 2, by a small majority; Bresee's King of the Earlies, No. 3; and Climax, No. 4. This vote was solely on the merits of the potatoes as they appeared upon the table, and had no reference to productiveness, earliness, or any other quality. Bresee's King of the Earlies is said to have been dug before it was fully matured, to save it from being stolen. Climax had evidently been badly kept, as it had the flavor of a potato that had been exposed to the air and light. The Early Rose was of the highest quality, and all the testimony was in favor of its great productiveness and earliness.

The Farmers' Club.—What should we do for fun if this advertising medium should become extinct? The Tribune claims to have "exclusive reports" (whatever that may mean) of the doings of this branch of its business. The New York Sun has reports that are not exclusive, and we quote from it the way in which a woman disposed of the gabble about deep plowing:—"Mrs. Hallock—'I am delighted to hear these gentlemen all repeat the same story, with slight variations. When I remarked here, a few weeks since, that this Club was not celebrated for scientific attainments, some of the reporters opened their eyes so wide that I feared they would never get them together again. But suppose a company of women should spend their time in discussing the subject of long or short stitches, what would you think of them? Gentlemen, it seems to me you are just

about as sensible in your talk, for you have not told us what you call deep or shallow culture.'"

Bids for the State Fair.—The officers of the New York State Agricultural Society are desirous of having the "bids" for the State Fair ready to be presented at the annual meeting, which occurs on the 10th and 11th of this month. The requirements are, good ground of about 30 acres in extent, well-fenced, the needed stalls, pens, buildings and offices, forage for stock, water, etc., and about \$1,200 in money. A schedule giving the details will be furnished to all sending for it to the Secretary, Col. B. P. Johnson, Albany.

A Great Poultry Show in Prospect.—At the last fair of the New York State Agricultural Society the Poultry-breeders present inaugurated a Society called the New York State Poultry Society, which has ever since been growing in influence, respectability, and the confidence of the public. Dealers whose reputation for dishonesty and trickery was or would have been a reproach to the Society have been both virtually expelled and excluded, and the energy of its members, the increasing ranks of its life-members, and the funds now on hand or pledged to the treasury, give the fairest promise that the proposed show, which is advertised to take place March 23d to 26th, will be well managed and worthy the fair beginning of the young Society. The officers have secured the 3d Avenue Skating Rink, a building 250 feet long, 150 feet wide, covered with an arched roof 70 feet high, and furnished with parlors, retiring rooms, committee rooms, etc., a restaurant, band of music, and everything needed for a grand poultry fancier's festival, except the fowls themselves. A lecture will be delivered by some distinguished speaker on some subject connected with the objects of the Society, and a very liberal premium list will shortly be circulated. Besides farm-yard and ornamental poultry, dressed poultry, Singing Birds, Rabbits, and all animal pets, are included in the prize list. An advertisement in this number of the *Agriculturist* furnishes further information.

Show of Pigeons and Poultry.—The American Columbarian Society held its first exhibition in New York about the middle of December. The show of fancy pigeons was highly creditable, and was especially rich in Pouters, Carriers, and Tumblers, of which breeds very beautiful specimens were shown by several exhibitors. The largest number of first premiums was taken by Mr. William A. Wood, of New York, who received on this account the Society's Gold Medal. The show of poultry was small, but contained some of the finest fowls we ever saw. Mr. Benj. Haines, Jr., of Elizabeth, was winner of the Gold Medal in this department, for having the most first prizes. Exceedingly fine Crevecoeurs and Cochins were shown by Mr. Leavitt, of Flushing.

Gardening for the South has met with an unexpectedly rapid sale. A work adapted to the peculiar wants of the warmer States has long been wanted, and Mr. White's book is just the one that was needed. Those at the North who have friends at the South can send no more acceptable present. Sent by mail for \$2.00.

Country Life.—A great many people annually leave the city and town for the country. We do not know any work better suited to such than "Copenhagen's Country Life," which gives the general management, not only of farm matters, but of ornamental grounds, flower gardens, green-houses, etc. A handsome volume of over 900 pages. \$5.00.

Great Show of the Pennsylvania Poultry Society.—Christmas week was devoted by the Pennsylvania Poultry Society to a show of poultry, open to national competition. The fine hall of the Horticultural Society was used as an exhibition room, and we believe all the appointments and regulations were gratifying to both exhibitors and visitors. There were 302 distinct entries, chiefly of fowls in trios. Brahmas were the prominent feature, there having been more than thirty coops entered, containing an aggregate of upwards of 100 fowls, and among them many of extraordinary size and beauty. A very interesting bird in this class was a 12-year-old hen weighing 14 lb. 6 oz. The show of Coeliffus was good also, the first prize being won by the Secretary of the Society, Mr. J. M. Wade, for a trio, the progeny of those of which we gave engravings last September, and winners of the first prize of their class at the show of the Columbarian Society in this city. Silver-spangled Hamburgs were quite a feature of the exhibition, and were very fine. Leghorns also were shown in good numbers. Our artist secured excellent portraits of those winning the silver cup, which we shall show our readers in due time. The French fowls seem hardly to be so great favorites among Pennsylvania breeders as with those in the vicinity of New York; but though the show in this class was not

large, it was very fine. A silver medal was offered for the best practical exhibition coop, which was taken by Mr. J. Salisbury, Jr., of Nyaek, New York. A very pleasant feature of the exhibition was that there were no money prizes,—silver cups, bronze medals, diplomas, and books being the prizes offered. We congratulate the Society on so satisfactory a show, taken all in all.

Evergreens are the most charming of trees, for they are beautiful in winter as well as in summer. They generally do best if planted later than other trees. The number of the hardy ones is greater than is generally supposed. Hoopes' Book of Evergreens is acknowledged, both in this country and in Europe, to be the best in the language. Beautifully illustrated. Price by mail, \$3.00.

Pears.—The Horticultural Annual contains a valuable article by P. Barry on new pears and his experience with the old ones.

Canadian Peas.—An inquiry in the *Janu-ary Agriculturist* in regard to the kind of pea raised most in Canada brings a prompt response from the editor of the "Farmer's Advocate," of London, Ontario. He writes as follows: "We have many varieties—some adapted to different soils and different purposes. We have the Golden Vine, the Crown Pea, and the Strawberry Vine, that are extensively raised for exportation or for milling purposes. Each has its advantages. The Crown Pea is the largest yielder, but requires good soil and good cultivation, and can be cut with the mowing-machine. The Golden Vine is more productive in straw, and is extensively cultivated here. It will smother weeds much better than the former variety, and may be more successfully raised by the careless or slovenly farmer. The third variety is a small and fine pea, but not so extensively raised as the others. We also cultivate the White Marrowfat, Black-eyed Marrowfat, and Imperial Blue Peas, for stock. The California Peas have also been cultivated here, but are longer in maturing and yield too much straw."

Our Native Birds.—It has been long in contemplation to publish a series of articles on our native birds, which should be not only popular but accurate. The illness of the gentleman who promised these articles prevented the execution of this plan. We have now made arrangements with others to carry out our original intention.

Oyster Shells Around Trees.—"T. E." asks:—"Are oyster shells around fruit trees a protection against borers? What would be the effect if they were burned and the animal matter expelled? Would they then do the trees any harm? Would they do any good in any way?"—Oyster shells around fruit trees would be just as valuable as stones or any other mechanical obstacle to the parent of the borer; they would prevent her from depositing her eggs. Shells when burned are converted into an entirely different substance—shell lime—which differs somewhat from common lime. We should not advise to heap this around a tree, as caustic lime of any kind would injure it; but shell lime would generally be a valuable manure spread around the tree. The cases of shell in its natural state and burned are widely different.

Unsafe Advice.—There is a great deal of advice going about with respect to the medication of animals, which it is unsafe to follow. The following is sent to us:—"For a preventive of hog cholera, dissolve blue stone in swill, and give it to the hogs while in health. If the solution is strong, put shelled oats or meal on the top and they will drink it all up. I salt my hogs as regularly as my other stock."—"Blue stone" is Blue Vitriol (sulphate of copper). It is a violent emetic, and in doses of two drachms a fatal poison to man. Six grains have been known to kill a dog. That in moderate doses it might act as a useful astringent in hog cholera we do not doubt, but the direction to make the solution "strong," without saying what is meant by "strong," is likely to lead to unpleasant results.

Practical Floriculture.—We have in the announcements of this work already given an idea of its scope. The press of business at the beginning of the year prevented its issue earlier, though it has been some time in type. The book is now ready, and we regard it as one of the most valuable among the many valuable works we have published. Price \$1.50 by mail.

The American Entomologist.—This journal improves in value with each number, and its mechanical appearance is excellent. We do not know either editors or publishers but by their works, and from these

we wish their enterprise all success. Very cheap; \$1 a year. Published by R. P. Studley & Co., St. Louis, Mo.

Mushrooms.—Mrs. E. Earl, Fountain Co., Indiana.—Mushroom spawn is not the seed, as mushrooms have no seed, in the proper sense of the term. To express the matter popularly, the mushroom plant consists of numerous whitish threads, which grow in manure, or in a highly manured soil. The part which we value may be regarded as the flowering portion of the plant, though it does not bear flowers, but produces in its "gills" a reproductive dust. The threads, of which the underground portion of the plant consists (*mycelium* of the botanists), are capable of laying dormant for a long time, but revive and grow when placed in proper material and supplied with the necessary heat and moisture. Spawn consists of blocks of earth and manure, through which these threads have spread themselves; the blocks are dried, and the thread-like plant remains in a state of suspended animation. Pieces of spawn are put into a bed, and, if the conditions are right, the plant will spread rapidly, or, as the gardeners say, "the spawn will run." When the underground portion acquires sufficient strength, it throws up its reproductive organs, which are the mushrooms. The raising of mushrooms is rarely successful, except under a shed or in a cellar, and even under the best circumstances experienced gardeners often fail. Henderson's "Gardening for Profit" gives an account of his process, but it is too long to transfer to our columns.

Cherries.—F. R. Elliott, the authority on cherries, has an excellent article on their culture in the Horticultural Annual.

Hen Manure.—A subscriber writes: "I have about twenty barrels of pure hen manure; will it do to let it lay in bulk? If not, what is best to mix with it, and in what proportion for general use?"—If you have dry muck, mix it with that, and let it lie in a heap until it heats. Then work it over and mix with more, doing so three times, perhaps, and finally having the hen dung mixed with fully four times its weight of muck, and that will probably be eight times its bulk. Soil will do instead of muck, and common barn-yard manure will answer very well, and the compost will be very rich.

Currant Worm.—"Inquirer."—What is commonly called the currant worm attacks the leaves only. The one you found in the pith of the stem is the larva of another insect, a currant borer, of which we have two kinds. The larvae, or rather the chrysalis, is still in the stem, and the perfect insect will eat out in May or June. As your "new wood is all killed," cut it off and burn it, and so far prevent the increase of the insects.

Grapes.—An account of the new varieties, and valuable notes on the old ones for 1869, will be found in the American Horticultural Annual.

A Bushel of Lime or of Corn.—"Cordova," of Westfield, N. J., writes: "I would like to know if, when you speak of a 'bushel of lime' in the *Agriculturist*, you mean unslaked or slaked lime? and speaking of corn, whether you mean shelled or not?"—The common agricultural lime of this part of the country is shell lime, and this is always, so far as we know, sold slaked. Other lime is slaked before it is applied; hence, we always mean slaked lime when we refer to an application to the land, or of lime as an ingredient of a compost, unless the contrary is specified. "A bushel of corn" always means a bushel of shelled corn, or its equivalent, 14 pounds being allowed for the weight of the cobs. Thus 56 pounds is the legal weight of a bushel of corn, except in a few States, and 70 pounds that of corn in the ear.

Cheese Making vs. Butter Making.—A correspondent in Eastern Pennsylvania asks the following questions, which doubtless will interest thousands of our readers: "1st. Does *cheese making* pay better than producing butter? 2d. Is the eastern part of Pennsylvania as well adapted to the production of cheese as New York, Ohio, or other parts of the country where it is successfully carried on?"—In cheese making, all the milk and all the cream may be used; or most of the cream may be removed, and the skimmed milk made into cheese, or only half the milk may be skimmed, and the rest made cheese of. In making butter, the greater part of the cream rises in two or three hours, and it is a common custom to skim this off and send the skimmed milk to the city, where it will always bring a good price. Much of this half-skimmed milk is condensed in some parts of the State of New York, and thus a home market made for sweet skimmed milk at the factory, and probably two-thirds as much butter made as if all the milk were set as usual. Where there is an extra good market for butter, and the herds of cows have long been bred as

butter makers, we doubt if it will pay to make cheese. "Skimmed-milk cheese" (made from *sweet* milk, of course) is said to pay well. The condensed milk alluded to is sold in the cities at a little less price than the condensed whole milk. Cheese making on the large scale, and where the aim is to produce the best possible article from the whole milk, will not pay usually within the range of the milk trains running into our large cities. The "eastern part of Pennsylvania" is well adapted to producing cheese, but still it may be a question if some other disposition of the milk will not bring in more money.

Spotted Quinces.—"N. C. T.," Staten Island, is troubled with black spots on his quinces. His statement that the trees stand on rather poor soil probably explains the matter. Prune the trees, if, as is usually the case, they are a mass of suckers, and give a good dressing of manure. Salt is considered beneficial to the quince, but your trees are too near the sea to be likely to need it, though a sprinkling would do no harm.

Boiled Potatoes for Milk Cows.—"J. K. H.," of Norwood, N. J., writes: "Are boiled potatoes good for milk cows? I was going to feed them to my cows, and several of my neighbors told me that they would dry them up."—We have been often remonstrated with for recommending and feeding Indian meal to milk cows, for the same reason. People who feed nothing but cornstalks and dry hay are apt to console themselves with some such notion, as the fox did who believed all the grapes were sour which he could not reach. We do not feed boiled potatoes—not for the reason that they will dry the cows up, but because corn fodder, and oil-meal and corn-meal mixed is a cheaper and better diet. If any of our readers can prove that boiled potatoes dry up cows, we are open to conviction.

Small Fruits.—Every year brings many new varieties, and Mr. A. S. Fuller gives his experience with them in the Horticultural Annual.

"Our Young Folks."—Fields, Osgood & Co., Boston, publish such a charming Juvenile Magazine for boys and girls, that one involuntarily wishes he were young again, that he might experience the pleasure that only children can feel over such a beautiful periodical, prepared expressly for them. Beautiful stories are illustrated by beautiful pictures, and all in just as grand a style as if it were intended for Old Folks instead of Young Folks. 20 cents a number is very cheap for so good a thing.

Death of Caleb N. Bement.—Few, if any, of our readers, who are fanciers of poultry, are not familiar with the name and writings of Mr. Bement, who was widely known, both as a poultry fancier, and as the author of the fullest and most elaborate American work on domestic poultry—"The American Poultryer's Companion." He learned the trade of a printer in a newspaper office, and followed it in Poughkeepsie and Albany. At the latter place, he was for many years a popular hotel landlord, a contributor to the agricultural press, and we believe managed a farm in connection with his establishment. He subsequently had a farm on Staten Island, and for some fifteen years, until quite recently, had charge of the farm and gardens of the late Matthew Vassar, of Poughkeepsie. He had much experience, wrote easily and acceptably on a variety of subjects, was a good observer, a man of discriminating judgment, and much respected. He died December 22d, at Poughkeepsie, aged 77.

Report on the Trial of Plows, held at Utica, by the New York State Agricultural Society, etc. This is an octavo volume, of 288 pages, illustrated with 8 plates and 129 wood engravings. The first six chapters (134 pages) are a *History of the Plow*, from the earliest time to the present. Then follow chapters on the "Objects to be Accomplished by Plowing," on "Practical Questions in Plows and Plowing," on the "Line of Draught," and on the "Mechanical Conditions of the Plow;" then the report of the trial, and of the supplementary trial held at Brattleboro, Vt., in June, 1868. We did not publish the awards, as announced, preferring to wait for the report. They are as follows: Class i. *Sod Plows for Stiff Soil.*—Gold medal to F. F. Holbrook, Boston, "Lap-furrow plow." (No competition). Class ii. *Stiff Soil Stubble Plows.*—Gold medal to same party for "Holbrook's 66." Class iii. *Sandy Soil Sod Plows.*—No fit soil; no awards. Class iv. *Stubble Plow for 3 Horses,* to turn a furrow at least 5 inches wide and 12 inches deep.—Gold medal to F. F. Holbrook, Boston, for "Holbrook's 69." Class v. *Sod and Subsoil (Double or Michigan) Plows.*—Gold medal to same party for "No. 69," with stubble mouldboard and skim plow. (No competition.)

Class vi. *Subsoil Attachment* to ordinary plow.—Award withheld.

Class vii. *Ditching Plow* for opening drains.—Gold medal to N. Hawkes, Appleton, Maine, for Hawkes' Ditching Plow and Cultivator.

Class viii. *Ditching Machine for Underdraining*.—Gold medal to E. Heath, Fowlerville, N. Y.

Class ix. *Steel Plow* for alluvial and unctuous lands.—Gold Medal to Collins & Co., New York, for "C No. 3." (No competition).

Class x. *Swing or Side-hill Plows*.—No award made, as the Committee were divided between F. F. Holbrook's plow and that of Lyman D. Burch, of Shelburn, N. Y.

Harrows.—Gold medal to J. E. Morgan, Deerfield, N. Y. Special gold medal to F. Nishwitz, (no address given) for scarifier and clod-crusher.

Cultivators. Class i, Sec. 1.—(One-horse). Alden & Co., Auburn, N. Y. Gold medal. Class i, Sec. 2. A. L. Brearley, Trenton, N. J., for Pfifer's 2-horse Cultivator and Cotton Plow. Gold Medal. (No competition).

Cultivators. Class ii, Sec. 1.—(Two-horse). Ford & Howe, Oneonta, N. Y. Gold medal. Class ii, Sec. 2. W. H. Bartis & Co., Maltaville, N. Y. McQueston's Improved Cultivator. Gold medal.

This report has evidently been prepared with the careful diligence characteristic of the Chairman of the Committee, but for the lack of that editing it should have had, hours of labor are imposed upon any one who wishes to learn anything from it. Careful reading of the entire report, which is necessary in order to make out the list of awards, brings to light many points which render the work fairly liable to rather severe criticism, and not less the hook than the whole work of the Committee. The above was prepared for the previous number of the *Agriculturist*, but was crowded out. Fuller comments upon the work, which is really a valuable addition to our agricultural literature, are rendered unnecessary by the notice it receives from the writer of "Walks and Talks."

Forwarding Cabbage, Cauliflower, and Lettuce.

BY PETER HENDERSON, BERGEN CITY, N. J.

During the past month, I have had scores of applications from beginners in Market Gardening, enquiring whether there is any way in which the above-named vegetables may be forwarded by hot-bed or otherwise, so as to be in the condition that our cold-frame plants are for planting out in spring. It being impossible for me to make suitable replies to such queries separately, I avail myself of the medium of the *Agriculturist*, to briefly detail a method we now practice, by which as early a crop can be obtained as by wintering over in cold-frames, and where the necessary forcing-pits are in use, at less expense than by the cold-frame process. In all districts having a latitude nearly that of New York, the seed for Cabbage, Cauliflower, or Lettuce, should be sown from the 1st to the 15th of February in forcing-pits, or in hot-beds, such as we describe in "Gardening for Profit." But instead of sowing the seed on the benches of the forcing-pits or in the bed of the hot-bed, as there described, we advise it to be sown in shallow boxes. We use the ordinary soap box, cut in three parts, giving a depth of two or three inches of soil, and a surface of about two square feet. Care must be taken that the bottom boards are not matched too close, so that the surplus moisture may pass off freely. The best soil is sandy loam and leaf mould, in about equal parts, or if leaf mould cannot be got, stable manure, decomposed to the condition of leaf mould, will answer equally well. The seed should be sown somewhat thickly—say an ounce to every ten square feet. If sown on the 1st of February, and kept at an average temperature of sixty degrees, the plants will be two or three inches high in three or four weeks, when they should be planted out in the same kind of boxes and soil, at such a distance apart as will give about two hundred plants to each box. If the weather is warm and sunny at the time the seedling plants are put into the boxes, it will be necessary to shade them for two or three days, until they begin to form new roots, giving a moderate watering whenever the surface of the soil appears dry. For the first week the same temperature may be maintained as for the seed boxes, but gradually more air must be admitted, so as to harden the plants, and fit them to be placed under the protection of sashes only, without further artificial heat—simply cold-frames. This treatment, by exposing them to the air, (by removing the sashes entirely) whenever the weather will admit, will harden the plants sufficiently to be planted out in the open field by the first of April. During the latter part of March, the sashes would rarely require to be kept on during the day, but it will strengthen the plants to be protected from the cold at night until the end of the month.

One of the advantages of growing these plants in shallow boxes is that, being thus portable, they are readily

changed from one hot-bed or forcing-pit to another, and they grow quite as well for the short time necessary in two or three inches of soil as in a greater depth. Another advantage is, that the transplanting process has the effect of making the plants form the necessary fibrous roots, besides giving them greater strength, from standing more thinly in the transplanting box than in the seed-bed.

Last season I tested a few thousand in this way by the side of those wintered over in cold-frames, and found that there was no perceptible difference, those sown in our forcing-pits in February being marketable quite as soon as those sown in September and kept through the winter.

This method may be practiced even by such as have not the conveniences of either forcing house or hot-bed sashes of any kind, for seeds sown in boxes and placed in the window of any dwelling room in which a comfortable heat is maintained can be treated just as we do those in our hot-houses or hot-beds, only that by the time the plants have been transplanted, it will be necessary to harden them off, which, in the absence of sashes, may be done simply by taking the boxes out of doors during warm March days, and placing them in the house at night.

Forwarding Tomatoes, Pepper, or Egg Plants, we do exactly in the same manner, except that as they are plants requiring at all times a high temperature, instead of sowing the seed in February, as we do Cabbage and Lettuce, we sow in April, and the transplanting in the boxes is not done until May.

Curing Bacon for the English Market.— Letter from Moscow, Russia.

"E. H." writes from Moscow, Nov. 2, 1868: "I want to raise a thousand or more pigs, and go into the lard business, as well as ham and bacon, here in Russia. The average price of corn-fed pigs of 350 lbs. is, with us, 5@5½ cents per lb., currency, live weight. Just now, it is 7 cents. Salt is worth \$2 per cwt. Do these prices promise a paying export business to England and Germany? The freight from here to either London or Hamburg is about \$1.50 per cwt. The quality of the corn-fed meat is good. But, so far, the few experiments which have been made in ham and bacon curing for exportation have failed. I account for it because ham and bacon are cured here during very cold weather, out of frozen ment, which is unfrozen in the most sudden way. They put the carcass in a Russian bath-room, where the temperature is exceedingly high, and after leaving it for only six or eight hours, they cut it up, and salt the hams in tubs and the bacon dry. Ham and bacon are badly cut; that is, in a way that is not known or liked in England. And all is done in the most slovenly way imaginable.

In regard to pig raising, I know a place on the banks of the Volga, where about twenty starch-mills are at work. The refuse from them is sold there on the spot at 10 cents per cwt.; and as the mills are worked in the most primitive way, I reckon that the refuse must contain more nutritious matter than the refuse of your mills. The starch is made out of wheat. Some geese, but no pigs, are raised there. The price of rye there is about 70 cents per bushel; barley, 60 cents; oats, 40 cents just now, but these are uncommonly high prices. At how much per lb. could I raise bacon pigs at these prices? And what kind of breed would best answer my purpose? I want, I believe, pigs attaining great weight; more so than those which produce delicate meat, especially as I want to produce lard and bacon principally. The animals ought to be hardy and able to stand our severe winter. Lard has gone up here in the course of a year from 11c. to 14c. per lb. The rise is owing principally to the demand from Germany and England. The exports this year were about 1,000 tons. Though a very small quantity for so large a country, it has not failed to produce a marked effect, inasmuch as, in former years, none was exported."

REMARKS.—It gives us great pleasure to attempt to reply to these questions, but we fear we can throw very little light on the matter. On a farm, pigs can seldom be raised with much profit, except in connection with other stock. Their true office is to eat food that would otherwise be wasted. Without knowing how much water it contains, we can make no accurate estimate of the value of the refuse from the starch mills. A good deal depends on the demand for, and value of, manure in the neighborhood. Pigs fed on this refuse would afford rich manure, but for fattening hogs it would be well to give, in connection with it, some grain containing more starch, such as barley or rye, or Indian corn. With ordinary pigs, shut up to fatten, it would take about eight bushels of rye or barley to make 100 lbs. live weight of pig. If kept in large numbers, and in pens not well littered and otherwise comfortable, it would take considerable more. At 7 cents per lb., live weight, after deducting expenses, there is not much margin for profit. A good deal would depend on the price paid for the pigs when shut up to fatten. If they could be bought for 5 cents per lb. and sold

when fat for 7 cents per lb., the account would stand thus:

1 pig, 250 lbs., at 5 cents,.....	\$12.50
16 bushels rye and barley, at 65 cents,.....	10.40
	\$22.90
1 fat pig, 450 lbs., at 7 cents,.....	\$31.50
Profit,.....	\$8.60

The manure, if carefully saved, ought to more than pay for attendance, interest, etc. In this country, we can usually buy lean hogs two or three cents per pound less than fat ones. If this is the case in Russia, hogs might be fattened at considerable profit.

In regard to raising a thousand pigs, we doubt if it can be done profitably, except in connection with other kinds of farming. The sows should have a good range of clover or grass in summer; otherwise they can seldom be kept economically. With good pasture, and a feed twice a day of the refuse from the starch factory, the sows and store pigs might be cheaply kept through the summer and autumn. Those intended for fattening in the autumn and early winter might be kept in the same way, except that they should have a more liberal allowance of the starch refuse. Success will depend very much upon keeping them growing rapidly while at grass, so that when shut up to fatten, little grain will be required to finish them off. The quality of the bacon and also the quantity of lard depends a good deal on keeping the growing pigs rapidly advancing. The nearer fat they can be kept at all times, the better will be the bacon, and the more and better lard will they yield.

For the English market, the quality of the bacon is of prime importance. The dealers and consumers are excellent judges of the article. They will pay full prices for good bacon, while that which is inferior or badly cured is difficult to dispose of, even at a low figure. The breed or kind of hog has something to do with the superiority of English bacon, and the fattening not less so. Get a good kind of hog, and never let it be starved at any time. This is the great secret of success. We are not sufficiently acquainted with the breeds of pigs in Russia to say which is the best. We have seen "Russia hogs" imported to this country that had many good qualities. They were strong, hardy, pretty well formed, of good size, but decidedly coarse, and the quality of the meat was not satisfactory. But a cross with some of the English breeds, such as the Yorkshire or Essex, would greatly improve their quality and fattening properties. And such a cross, if well fed, would come to maturity earlier and afford a great deal more lard. For bacon, it is not only important to have hogs of good size, but they must be fat. This is more important for bacon than for pork, because in drying, any lean that is left on the flitches or sides withers up and becomes rusty, imparting a disagreeable flavor to the meat.

Bacon is sent from Canada and from the United States to England, and when proper care is exercised, it gives good satisfaction. We often experience as low a temperature here as in Moscow, and much of our pork is made from carcasses frozen solid, and in this condition transported hundreds and even thousands of miles. But it is essential to thaw them out before salting. And it is, doubtless, very important that this should be done gradually—say in a room not over 40° Far. So far as climate is concerned, we think there is no reason why bacon and hams cannot be cured in Russia as well as in Canada and the United States. Before embarking largely in this business, however, it would be well to visit the pork packing establishments in this country. Our impression is, that it would be found that pigs can be raised and fattened and cured in the Western States cheaper than in Russia. Certain it is, that in past years, our Western farmers often sold corn-fed hogs for less than 5 cents per lb., live weight. But here, as in Russia, and in fact throughout the world, pork is much higher than the average of former years before the war. We should be pleased to hear from our correspondent again.

Bee Items.—By M. Quinby.

Artificial Queens.—In the improved management of bees, a resort to artificial queens will be necessary. But before bee-keepers will have full confidence in such queens, they must be satisfied that they are, in every respect, equal to others. By artificial queens is meant such as are reared from eggs or larvae that are deposited in worker cells, and would have produced workers but for the changes made by the bees.

Much has been said about the imperfect development of such queens, and especially that they are cramped for room in worker cells in the early stages of their existence. Being satisfied myself that this objection is not well founded, I shall try to satisfy others. All admit that eggs laid in worker cells and queen cells are precisely alike. That in the worker cell produces a worker, the other, a queen. It is contended that the queen reared in a worker cell must be dwarfed in size, as a larger bee

than a worker cannot expand there. But it is demonstrated that queens are *not* reared in worker cells after all. The egg that produces the queen may be laid there, it may hatch there, and the larva be fed as a worker for two or three days; but then, if a queen is required, the bees immediately enlarge the cell, and lengthen it. If there is room directly under it, it is turned downward; if not, it is made more nearly horizontal. The cell, as prepared for a worker, is *filled* to the very brim with royal jelly, on the surface of which swims the larva of the future queen. By examining such a cell, it will be seen that the larva does not occupy any part of the original cell, but has ample room in the part specially prepared. Another proof that the queen is not dwarfed by the size of the cell is, you cannot predict the size of queens with any certainty from the size of cells. A great many queens reared in large-sized cells are very little larger than workers. Any one at all familiar with the manner of raising brood is aware that *full-sized* workers can be reared in cells that have been used for the same purpose from twelve to twenty years, and must be diminished in size nearly one-third. It is thus quite clear that they were larger than required at first. Whoever will examine a sheet of new comb with brood in the chrysalis state will find the cell much larger than the bee, and ample room for a large moth-worm to spin its gallery between the head of the bee and the capping. I have seen many queens from large cells that would have had ample room for their development in one of these, showing conclusively that their size did not depend on that of the cell.

It is also said, that when a very few bees are set to rearing queens, the quantity of food is likely to be less than it should be, and that an inferior size is the consequence. But whoever has looked into a queen cell immediately after its occupant has left, has invariably found some of the food yet remaining. This is certainly not an evidence of a scanty supply. Until something more conclusive shows that artificial queens are indeed inferior to others, I shall continue to recommend in future numbers of the *Agriculturist* the rearing of just such artificial queens as my experience has proved to be most profitable.

Bad Luck with Bees.—M. C. Hester, Clark Co., Md., says: "We are having terribly bad luck with our bees. I think I am within the bounds of truth when I say that fully half the stands of bees in this and the adjoining county of Scott have died since the honey-raising season closed. They have not died for want of stores, for all that I have examined or heard of have left an abundance of honey in their combs. Nor are they troubled with worms, or 'foul brood,' or dysentery, or other disease mentioned in the books. I suspect the cause of the trouble is the loss of the queens. We cannot discover anything ailing the workers. There has been very little brood in any of the hives since the middle of October. Can you give us any light on this matter? No one can account for it. Some think it in some way caused by the locusts that swarmed upon us in the spring. They have not done well during any part of the season, made very little surplus honey, and not one stand in twenty sent off a swarm."—Although the foregoing was private, it seems advisable to print it, as very many bee-keepers in Mr. Hester's locality have suffered in a similar way, and one case, somewhat like it, was reported from Ohio, in the *Bee Journal*. No one seems sufficiently acquainted with the difficulty to be able to explain the cause, or give a remedy. Mr. Hester suspects the "cause of the trouble is the loss of queens," but this is secondary only; we wish to know the cause of the loss of queens, and of workers as well. There being but little brood after the middle of October does not prove the hives queenless. It is quite common for the most thrifty stocks in many sections to cease raising brood by the middle of September. The cause of other maladies has been found in the quality of the honey, and if we could ascertain from what sources these bees obtained their stores, it might afford the desired light.

Mr. Wagner, editor of the *Bee Journal*, gave me, a few years ago, a description of a malady, in the form of foul brood, that was observed in Germany. In a peculiar season, (I forget whether very wet or very dry) there appeared upon the leaves and twigs of the trees myriads of plant-lice (*Aphides*). These secreted and discharged a clear saccharine fluid, much sought after by the bees. The result was that in a few months foul brood prevailed to an unprecedented extent. A few years since, in one of the Western States, (Illinois, I think) this aphid was found on standing grain, particularly oats, injuring the grain materially. The next winter, bees seemed unhealthy, leaving the hives in cold weather with swollen bodies, and perishing by hundreds. Those describing this attributed it to the aphid, and were probably correct, as there has been no further complaint of unusual maladies until now in Indiana. The present season is reported as rather poor in Illinois, Indiana, and Ohio. It is possible that in some places the bees have availed themselves of some unusual product, and are affected as described in consequence. The probability is, that the

trouble will pass away as suddenly as it appeared, without giving us any further clue as to its cause.

Bees Do not Swarm.—J. Scholl, Lyons Station, Ind., writes: "I have practiced artificial swarming, with very good success, though I have had no instructions except through the *Agriculturist*. But the past season, the bees in this section of the country, and as far as heard from, have refused to swarm, with hives full of honey, brood, and young bees. Waiting full two weeks after the time for early swarms, I took a swarm from each hive, all of which soon filled their boxes, as the honey season was splendid for a few weeks. But young bees did not appear again in the old hives until late in July. Of forty stands of which I have knowledge, and which were allowed their own time to swarm, only six did so the past season. The experience of the last ten years convinces me that, with black bees, it will not do to depend on natural swarming; for, as a general thing, four-fifths of all strong *early* swarms go off. Late, weak ones stay, and are not worth bothering with. Would the Italians do any better here, where there are such inviting places in the woods for them?"—This shows the advantage, as well as the necessity, of taking this swarming matter into our own hands. Thousands who keep bees have had similar experience. It is a difficulty that attends all swarming hives; hence, much better things cannot be expected of the Italians, under the old system, and working with that system only I cannot give a satisfactory reply. Continued and valuable experience, however, suggests new forms of management, by which the evil can be remedied. By taking advantage of a knowledge of certain facts and laws in respect to bees, we expect to have such entire control of them, as to direct their energies either to increasing their colonies or to the storing of surplus honey, as we may choose. In the course of the season, I expect to give the results of my later experience, and at the proper time, to speak particularly of the difficulty above mentioned.

On Colic in Horses.

BY PROFESSOR JOHN GAMGEE, OF LONDON, ENG.

The diseases of animals are materially modified in different species by the structural and functional peculiarities of their various organs and parts. A comprehensive knowledge of the anatomy and physiology of all domestic animals is therefore essential to the full understanding of their maladies, and no better illustrations of this can be afforded than by referring to the digestive organs. The ox gathers food rapidly, accumulates it in his paunch, then ruminates; and by the peculiar action of the third stomach the solid parts of the food are retarded for effectual digestion in the true or fourth stomach, while the liquid portions pass on, are promptly subjected to the action of secretions in the intestines, and are thus absorbed. The great mass of imperfectly digested food, therefore, lies in the large pouches described as the first three stomachs. Hence it is that cattle are subject to hoove, or disengagement and accumulations of gases, in the first two stomachs, and then to impaction of the third, which constitutes either an independent disease of a dangerous character or a frequent complication in febrile and other maladies that are associated with costiveness. The horse, on the other hand, has a small single stomach, and some idea of the difference in the amount of food retained in the gastric cavities of the horse and ox may be formed from the fact that a horse dying of repletion of the stomach has been found to have not more than thirty pounds weight of food impacted in it, whereas an ox that has been fasting for twenty-four hours has been found with one hundred and fifty, and as high as two hundred pounds of fodder in its first two stomachs. The horse feeds fast, but the food is not retained long in the stomach, and passes on for more complete digestion in the intestine. Ruminants have a long intestine. In sheep it is twenty-seven times the length of the body; in the ox, twenty times; and in the horse, twelve. But in the horse the large intestine is very capacious, and occupies the greater portion of the cavity of the belly. It is sacculated and puckered up by muscular bands so as to retain the food for a long time, and it is owing to the bagging of the intestinal tube that the excrement becomes dry and ball-shaped, as it is in the horse. In ruminants, therefore, the food is kept long in the stomach and passes quickly through the intestine, whereas the reverse holds in the horse.

It is evident from these remarks that when horses suffer from an accumulation of undigested or indigestible matter in their alimentary canal the tendency is to impaction of the large intestine. The great weight of material held in the pouches of the intestine demands a constant rolling and forcing movement, due to what physiologists call the peristaltic action of the intestine, and if anything interferes with the mobility of the included mass the muscular cord of the intestine is liable to irregular, spasmodic, and painful efforts. This is the theory of spasmodic colic in the horse, and although there are many causes assigned

for this common disease, such as drinking cold water, exposure to draughts, etc., it is necessary to impress on all horsemen that in the great majority of cases where a horse shows signs of pain in the belly by pawing, crouching, lying, groaning, rising and lying down alternately, rolling, etc., the intestine requires to be relieved of an obstructing mass. It is the want of this simple item of knowledge that renders colic the most fatal of all equine diseases, and in the British Isles about fifty per cent of the deaths by disease amongst horses occur from simple indigestion, or what is commonly known by the names of colic, spasmodic colic, flatulent colic, etc.

It is not my intention here to enter into minute details concerning the symptoms, results, and varieties of this disease. The facts I wish to impress on American farmers relate more to prevention and treatment. Regularity in feeding, and the use of sound corn, oats, and well-cured hay, constitute the great injunctions regarding prevention. The cure of the disease is as simple as it is effectual, and it is most effectual when practiced early. As usually treated, colic is a very fatal disease, whereas with proper treatment not one case in five hundred should be fatal.

A farmer should never be without a funnel to be used in giving injections to sick animals. The funnel may be made six inches wide at top, five inches deep, leading to an inch tube two inches long; from the end of this tube a horizontal pipe extends about nine inches in length, tapering to a half-inch hole, properly rounded off on its edges. Any tinsmith can make this invaluable instrument, and it will be found that having oiled the tube and passed it into the intestine, tepid water can be readily poured in without the aid of any pumping force. A syringe stimulates the intestine to repel the liquid, whereas if water be permitted to gravitate by the funnel two or three quarts will gravitate slowly and be held. It is a mistake to use too much water at once. The injections should be repeated every ten, twenty, or thirty minutes, and given with care. Medicated injections are, as a rule, not desirable.

Not infrequently one or two injections suffice to cure a horse, but as a rule it is necessary to administer a purgative according to the age and size of the animal. Five or six drachms of good aloes, made up in a ball, is the most certain agent, and no faith must be had in the frequent recommendation to give the physic in solution. Aloes acts promptly as a nauseant, sedative, and last, but not least, as an evacuant. If farmers will learn this lesson by heart I vouch for they will rarely, if ever, lose a horse with colic. They should try no nostrums, stimulants, anti-spasmodics, or poisonous sedatives. Let them use aloes and injections early, and trust to them. Above all things they must not bleed a horse when attacked by colic.

The Sefton Breed of Swine.

The Earl of Sefton, whose estates are near the city of Liverpool, has devoted much attention to the improvement of swine, and has established a breed in some respects remarkable, which is here known by his name. The animals are distinguished by great size, strength of constitution, and the excellent quality of their flesh. They are quite different from the Berkshire, Essex, and other fine-boned and very fat breeds, inasmuch as while they are not coarse in bone, they are longer, deeper flanked, and not so excessively fleshy, although quite as much so as is compatible with the production of the finest pork.

It is reported—we are not able to say with what truth—that this breed in England is confined exclusively to the Earl of Sefton's own estate, and that he never allows any animals of the breed to leave his place alive for use in England, although he has, in several instances, allowed them to be brought to this country. General Tyler, of Red Bank, N. J., imported a pair some years since, and their progeny have been considerably distributed throughout the country. They are more nearly like the best specimens of the Chester White than any of our other breeds, and are claimed to be even superior to them. We are inclined to think that a cross of the two breeds would be better than either.

A pair of pure Seftons, slaughtered a year ago in Hartford, weighed eight hundred pounds, and their flesh was very firm and attractive in appearance. We are not disposed to recommend that these animals be adopted by any farmer

with the idea that they are vastly superior to anything else, but we think enough has been shown in regard to them, during the few years of their breeding in this country, to make them worthy of the attention of those who are seeking to improve their stock of swine.

Cutting Food by Power.

Much has been written concerning the advantages of cutting food for stock, and notwithstanding the stupid discussion that was held a short time ago by the remarkable Farmers' Club, in New York, where the quidnuncs of that association were so emphatically snubbed by Patrick Quinn, much more will be written, and an increasing confidence is sure to be placed in the beneficial results of the practice.

The great objection to the more rapid introduction of fodder cutting among our farmers is to be found in the fact, that, even with the best hand-power cutting machines, the work is very laborious, and the result is but slowly accomplished. Many have attempted to adopt the system with the aid of hand-machines, and have found it impossible to carry it out owing to the immense amount of time and labor required.

By the aid of the horse-power attached to a larger machine, this work may be done so rapidly and so easily, that the chief objection passes away. On all farms on which the number of animals to be fed is considerable, and where the proprietor is satisfied of the decided advantages of cutting, it will pay to purchase a horse-power, and a horse-power cutting machine. But those who desire to try the experiment in a somewhat extensive way, without the outlay of the two or three hundred dollars that the horse-power and the larger cutting machine would require, may attach any good cutter to the horse-power belonging to parties who, during the summer and autumn, thrash grain for others. It is a very simple matter to take one of these movable horse-powers, set it up in the barn, and connect its belt with the pulley on the cutting box; and one good horse or ox may be made to perform the work at this season without much interfering with the other uses of the farm team.

We confidently predict that any one who will give this system a thorough trial during a single season will find that the value of the food saved in feeding from ten to twenty animals will be sufficient to make a permanent investment in a horse-power a very profitable one.

Tim Bunker on Carding Cattle.

"Things look considerable grand round here," said Jake Frink, one morning, as he walked into my new barn, where I was cleaning off my Black Hawk span, getting ready to take Mrs. Bunker down to Shadown, to spend Thanksgiving. You see, Sally and her husband have generally come home to spend this day, but just then there was a responsibility so young that the mother could not venture out.

"The Squire is gittin' so pertikelar with his cattle that he'll be movin' em all into the parlor pretty soon, I guess," responded George Washington Tucker.

"Many a poor fellow don't have sich blankets as them hosses," said Seth Twiggs, as he scratched a match and lighted his pipe.

"Nor sich bedding," added Benjamin Franklin Jones, looking at the clean, bright straw.

"Plauks, I see, are a little too hard for your animals to stand on," said Deacon Smith, in-

quiringly, as he poked away the straw and examined the bottom of the stall.

"There is three feet of dry muck in there," I replied, "and the pit is all cemented, so that I sba'n't lose any of the liquid manure. I calculate a horse will half pay for his keeping in the manure he makes, if you give him a chance."

"Iled chestnut for siding the stalls!" exclaimed Jotham Sparrowgrass, as he rubbed his hand over the surface. "I declare it looks about equal to the pews in the meetin' house."

"The Squire 'll be havin' a parson in here preachin' to his cattle, yet; see if he don't," added Jake Frink, maliciously.

"Mr. Spooner would get some bearers here that he don't have on Sunday, I guess," said Seth Twiggs, meekly, with a puff of smoke, that made Jake look blue.

"What new-fangled consarn is this you're cleanin' your crifters with?" asked Uncle Jotham, as he eyed a new India-rubber card that I was passing over the legs of the horses.

"What do you give your cows, that makes their coats shine so?" asked Deacon Smith, as he looked at a row of Jerseys on the other side of the barn floor.

"Oil-meal and carrots inside, and India-rubber card outside," I replied.

"You don't mean to say that you keerd 'em every day?" asked Jake Frink, whose tangled locks evidently had not been astonished by card or comb for many a day.

"Somebody attends to just this business every day, and I think it pays."

"Wall, Squire, you're a bigger fool than I thought you was. I've sometimes cleaned up a hoss when I had a trade ahead, but I never touched a keerd to a cow in all my life. 'Tain't naturel, sartain."

"Then," I asked, "what are the spines upon a cow's tongue made for, and why do they use them upon one another's hides so much?"

"They haint much else to do," said Jake, hesitatingly.

Now, I hold, Mr. Editor, that all our bovine animals carry a clean bill of rights to carding in their tongues, and the best card is the one that comes nearest to the original, which is moderately sharp, fine, and flexible. Women's rights, about which folks are making such a fuss, don't begin to be so clear as this matter. I wish you would get up a revolution, and put on a strong editorial team to advocate the divine right of our domestic animals to be kept tolerably clean and comfortable. It would not pay, perhaps, to put them all into a warm bath every day, as Deacon Smith's Eliza serves her lapdog, but it will pay to use the card and brush every day. They have an organization very like our own, and the skin is all the time throwing off dead matter, which lodges under the hair, unless some pains be taken to get rid of it. If left free, you will see them using their tongues upon every part of their body that is accessible, and getting help from their neighbors for those parts they cannot reach. They will rub their necks and backs against posts, and fences, and trees, to start this dead matter and clean their skins. In the summer they will wade into the streams, and stand for hours in the running water, to keep themselves clean as well as cool. There is no mistaking these acts. They show the instinct of cleanliness just as clearly as the comb, and brush, and wash-basin show it in man. Now, when we take these creatures into our care, and confine them in stalls and stables, we come under some obligation to treat them according to their natures. We have no right to torment them by withholding what they so

strongly crave. They want food and drink, and the means of cleanliness and comfort, and they are generally profitable to us just as we provide liberally for their wants. To keep them in the filth in which many farmers compel them to wallow is as shocking and cruel as it is unprofitable. Just look at Jake Frink's stables. There is not a curry-comb or brush in them, and has not been for a dozen years. He says he "never touched a keerd to his cows," but there is a card upon the buttocks of his oxen an inch thick, that certifies to Jake's nastiness, as if it were written in letters of ink. Is it any wonder that his neglected oxen get so weak that he has to hire his plowing done in the spring, and that his cows have the "slink fever," and his horse dreads the sight of crows? I wish we had your Mr. Bergh out here in the country. There is a great deal more need for a society to prevent cruelty to brutes than in the city. There are many more of the brutes, and the men who torment them with slow torture do not have all their neighbors looking at them, nor a policeman to step in and regulate their abuse. I hold that a man is demoralized by the abuse or neglect of his cattle. The farmer that will let his oxen lie in their own filth, from the beginning to the end of winter, without any effort to bed them or clean them, makes himself brutish, no matter how he stands in church or State. He can't fail to grow hard toward his fellows, as well as toward his cattle. But there is a right as well as a wrong way of keeping your cattle clean, as there is in doing other things. Some of the cards and curry-combs are fit only to scrape the hide of a rhinoceros. I have tried pretty much everything in the market, and have come to the conclusion that there is as much difference in cards and curry-combs as in other things. Here is a card with the teeth set into the wood, as stiff as so many shingle nails. Put this into Patrick's hand, and upon the back of a thin-skinned and nervous horse, and it is a terrible instrument of torture. No wonder he shrinks from Pat's approach, and learns to kick and bite. He is in a proper school to become vicious. Here is a curry-comb, cut out of a brass plate, with sharp saw teeth, and as unyielding as a saw. Think of such a tool going over bones not too thickly covered with flesh, and ripping up old sores! Is it at all strange that there is a chronic state of bad feeling between Pat and the poor brute, that is literally harrowed every day under the mistaken notion of cleaning? The old-fashioned wool card, with small brass teeth, inserted in leather, had some flexibility when carefully handled, answered a good purpose, but was rather too stiff. The card with an India-rubber back, fitted to the hand by a strap, is the latest and best invention in this line. It adapts itself perfectly under the hand, to all the little inequalities of the skin, and gives gentle friction without tearing. With a good brush, nothing better is needed. If the horses and cows could have a convention, I have no doubt they would pass a vote of thanks, or make the inventor a Justice of the Peace. It certainly promotes peace between man and beast, and makes the daily cleaning a luxury, instead of a torment. My animals come around me for their regular cleaning, with as much interest as they come for their fodder. They certainly understand the difference between hatchels and cards, between harrowing and cleaning. They thrive well under this treatment, and though it takes considerable time, I doubt if it could be spent more to their profit or mine.

Hookertown, Dec. 15, 1868.

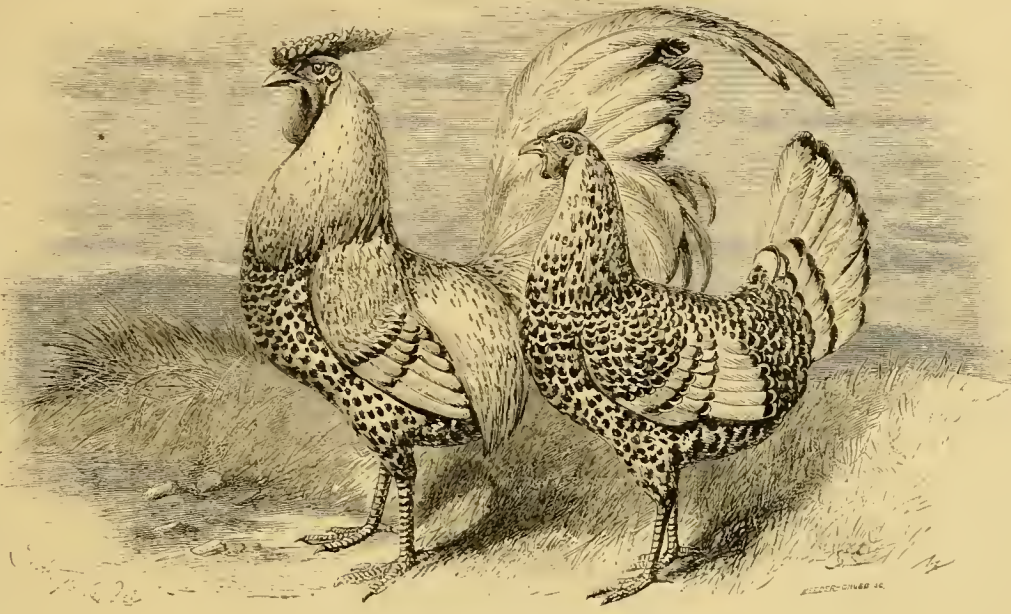
Yours to Command,
TIMOTHY BUNKER, ESQ.

Silver-spangled Hamburg Fowls.

The groups of distinct breeds called Hamburg have many points in common, and breed with great uniformity of marking. They are recognized as Silver-spangled, Golden-spangled, Silver-penciled, Golden-penciled, and Black Hamburgs. There are, besides, quite a large number of tolerably distinct varieties referred to the Hamburgs, but not recognized by fanciers, such as Bolton Grays, Chittaprats, Dominiques, Creoles, etc., all distinguished by close, double combs, full neck and saddle hackle, a full tail in the cocks, blue legs, proud carriage, and excellence as layers—usually, also, by having a disinclination to sit, which, in the well-bred fowls, is confirmed. The difference in the color and markings upon the feathers of the four breeds first named is very noticeable, and owing to their great distinctness, the different breeds of Hamburgs are among the most showy and beautiful of fancy fowls. Their great value is as layers, and as such they are esteemed among the most profitable varieties; but as their useful qualities are held secondary to their points of beauty, it would not be surprising to find the most beautiful specimens lacking somewhat in that particular. We give a picture of a pair of Silver-spangled fowls belonging to Mr. J. C. Sidell, of Englewood, N. J., exhibiting well the peculiarities of the variety. It will be observed that every feather is white, tipped with black. In the spangled varieties, this peculiarity is constant, and only one spot occurs. There are subvarieties of both Golden-spangled and Silver-spangled fowls, marked by a difference in the shape of the spots, as well as in the character of the birds. In the penciled breeds, each feather has several markings or pencilings. The more perfect these are marked, and the more even the color of the fowl, the more highly is it esteemed by fanciers.

During the winter and early spring, there are days and weeks when married laboring men, living in the neighborhood of farmers, can get nothing to do. In the summer, they will ask \$2.00 a day, and in harvest, \$3.00. If they could get \$26 a month, the year round, they would receive more money than they do now, and the farmers would get double the work done.

The fame of the sparrows and the good they have done in and around New York has spread abroad, and individuals elsewhere, desirous of introducing the birds in their own localities, have written us concerning them. We have been at some trouble to get portraits of the male and female bird, which are from life, one-half of the natural size. They are so exceedingly lively that

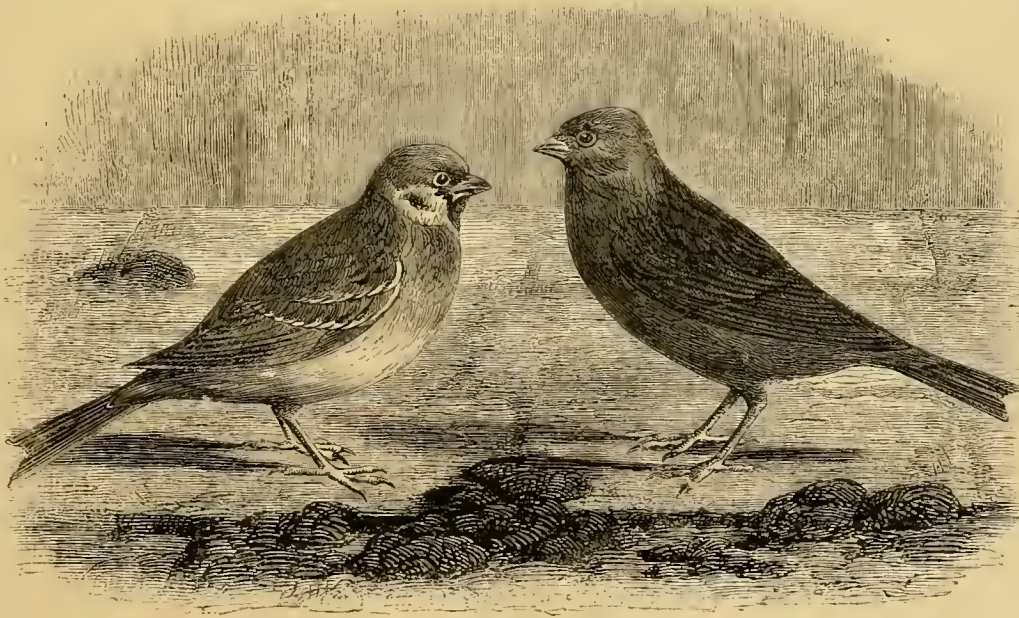


SILVER-SPANGLED HAMBURGH FOWLS.

The European or House Sparrow.
(*Passer domesticus.*)

A few years ago, the trees in the public grounds and streets of New York and its suburbs were so overrun by the span-worm that they were more of a nuisance than an ornament. "Worm-time" was dreaded by all, and many were the devices proposed for exter-

minating the span-worm. At last, some one introduced the European sparrow, which made itself completely at home, and soon proved too much for the insects. For the deliverance from insects the people have been duly grateful; whole villages of bird houses have been built for them, food is provided in winter, and their lives are especially watched over by the police. The sparrow is very prolific, several broods being raised in a year. They are remarkably domestic, preferring to remain about dwellings, and building their nests wherever a suitable cavity can be found. The young are raised mainly upon grubs and caterpillars, and it is estimated that a single pair consume 4,000 caterpillars in a week. The mature birds consume grain and other vegetable food, which, in cities, they find in the droppings of animals and elsewhere. It is a matter of doubt whether the general introduction of sparrows would be beneficial or otherwise. In England, where they are numerous, it is contended that they are the enemies, rather than the friends, of the cultivator, though the birds have their advocates. There is no doubt about their utility in cities, but in the country they are charged with consuming large quantities of grain, scratching up seeds in the garden, picking off buds of fruit trees in winter, and other mischievous acts. We have briefly stated the case in favor of and against the sparrow. The present price with the dealers is \$4.00 per pair, for birds said to be imported. Those who have them upon their premises are unwilling to part with them at any price. They readily make themselves at home in a small box for a house. In winter, food should be freely scattered where they can have access to it.



EUROPEAN SPARROWS.

LABOR ON FARMS.—That farmers must employ more labor is an undoubted fact. That there are men enough is equally true. The trouble is, that they are not steadily employed.

Walks and Talks on the Farm—No. 62.

"Why don't you come West," writes an eminent lawyer and farmer of Ohio, "and not wear yourself out among those stones? Suppose the stones *have* been placed in the ground on purpose to be taken out, does it follow that a good fellow who has brains and intelligence enough to do something better should be the man to take them out?" I will tell my friend why I do not go West. First.—Because I am here. Second.—Because there is a very general disposition to change, and, as a rule, it is better not to do what everybody else is doing; and consequently those who stay where they are will be likely to do better than those who are anxious to sell their farms and go West. Third.—Because I do not believe all the good things of this life are confined to one particular place. Fourth.—Because, so far as I have seen, taking everything into consideration, farms are cheaper here than in the West. Fifth.—Because there is abundant opportunity here to improve our farms, and there is great pleasure and profit in increasing the productiveness of land. Sixth.—Because I have stood in a two-hundred-acre field of corn in the vicinity where my friend lives,—land, rich, mellow, clean, no stones, and few weeds; nothing to do but plow, harrow, plant, cultivate, and harvest; and repeat the same thing year after year,—and I did not think I should like that kind of farming. It is too monotonous. To tell the truth I would much rather strike a stone occasionally and have the pleasure of getting it out. "But all the land in Ohio is not of this character." Very true; but if you take high, rolling upland, you meet with just the same difficulties we have here, and there is no use in selling one farm and buying another merely for the love of change. Here, in Western New York, we have just as good land, all things considered, as there is in Ohio. We may have to pay more attention to making manure; we may have to underdrain more; we may have to work the land more thoroughly, in order to kill weeds and develop the latent plant-food in the soil; we may have more stones to get out; but what of all this? There is great pleasure in underdraining; it is real fun to get out stones; and the good crops which result from killing weeds and manuring the land afford a kind and degree of satisfaction that can be obtained in no other way.

It is a mistake, however, to suppose that the West raises large crops without cultivation or manuring. The recently published prize essay on the Farming of Delaware Co., Ohio, by Judge Jones, shows that even the farmers in this celebrated district need to exert themselves in order to raise large crops. He says: "The crop of wheat in 1866 was a failure, being killed outright by hard freezing and high winds while the ground was bare. In 1867 the crop was very superior in quality and fair in quantity." He tells us, however, that owing to these occasional failures and the high price of labor, farmers have "greatly reduced the quantity of land devoted to this important crop." He further states: "The idea that wheat can no longer be grown with profit prevails to some extent all over the State." And let me say, the idea *will* prevail so long as it is thought that men, with "brains and intelligence," should be engaged with something better than getting out stones and improving the land.

"The average yield of wheat in Delaware Co. from 1850 to 1864 was a little over 11 bushels per acre." This county averages 33 bushels of corn

per acre, which is about equal to the average in the Scioto Valley. I do not think I will go West, and "wear out" my life in growing such crops.

We *can* do better here, though it must be confessed that our average yield of corn is no higher. But our land can be made to produce 80 bushels. All it needs is "brains and intelligence." The crop of oats in this county in 1865 did not average 27 bushels per acre, and barley only 11 bushels; potatoes not 80 bushels per acre; rye not 13 bushels per acre. These are small crops for one of the finest counties in Ohio. And the pastures are no better. Judge Jones thinks it requires "about two acres to graze a full-grown cow or ox, which," he adds, "is but little more than half the grass our lands ought to produce." No doubt about that. One of my fields the past summer supported stock equal to at least two cows per acre until after hay harvest, when I plowed it up, and summer-fallowed it for spring barley. And it was out of a knoll in this very field that we got the stones which seem to have excited the pity of my Ohio friend. Now if I can make such land carry double the stock it does in the Scioto Valley, and have the pleasure of getting out the stones besides, why should I go West?

Mr. Lawes used to say that in England the best farmers were found on the poorest land, and the poorest farmers on the best land. Thus Norfolk has the poorest land and the worst climate in England, while nowhere in the world can be found larger crops, cleaner land, or more intelligent, enterprising, and wealthy farmers. Devonshire has the best climate and the best soil in England, and, with some exceptions, the poorest farmers. Hitherto this rule did not prove good with us. We have the best farmers on the best and richest land. It will not always be so. I am mistaken if New England will not produce some of the most enterprising, intelligent, and successful farmers on the continent.

It seems I have been criticised in some of your papers for advocating large farms. I did nothing of the kind. All I said was that there was a manifest tendency towards larger farms, and that, argue against it and deplore it as we may, we could not stop it. The Deacon and I talked this matter over, and we came to the conclusion that the small farmers could spare but little produce for the support of the rapidly increasing population in our cities and villages. They may have neater farms and better gardens, but they raise little more wheat, and pork, and beef, than is necessary for home consumption. A good share of their income is derived from the orchard, and from the sale of small fruits and vegetables. We find as much intelligence, refinement, and real comfort and enjoyment, among this class as in any other. But, strictly speaking, this is not farming. A farmer is a manufacturer. He differs from other manufacturers merely in this, that while they generally buy a great many articles that they use, the farmer makes nearly all of his himself. Thus a farmer manufactures and sells wheat, barley, clover seed, beef, wool, mutton, pork, and butter; but in order to turn out these articles it is necessary to manufacture grass, hay, corn, oats, peas, and other articles needed for supplying the factory. It is a great establishment, and it cannot be profitably conducted on a small scale. To talk of ten acres being enough for a *farm* is simply an absurdity. It is difficult to manage even a fifty-acre farm in such a manner that there shall not be a great waste of hours, implements, fences, &c. It takes as long to get one cow from the field as a dozen. In a little country like England there is some

excuse for small farms, but here we have so much land that the Government gives it away to any one who will agree to cultivate it. The fact is, however, that in England the farms are much larger, as a general rule, than with us, and they are becoming larger rather than smaller. But enough of this. The rule should be to have as large a farm as one has capital, energy, and experience, to manage to the best advantage, and no larger. A young farmer should begin on a small scale, and enlarge his farm as he acquires capital and experience. It is easier to buy more land than to sell a part of a large farm.

The report of the trial of plows, &c., by the N. Y. State Agricultural Society, at Utica, in 1867, has just been published. It is a remarkable document. The report is longer than the trial, and smells more of the closet than the field. The trial consisted essentially in testing several plows constructed on a new principle, invented by Gov. Holbrook, of Vt. It is claimed for these plows that they break the furrow slice in turning it over more completely than anything we have had before. Judging from the report it is doubtful how far this elaborate and costly trial throws much light on the subject. The trial was to have been made in May, but owing to excessive rains, "which made the land like a mortar-bed," it was postponed until September, when, in the language of the committee, the soil, saturated with water in the spring, "had been baked by the fierce summer sun, until it was almost as hard as a brickbat." No farmer would attempt to plow such land during a severe drouth, and it is not easy to see how such a trial affords any satisfactory tests of the merits of a plow to be used in ordinary plowing. Then, again, there was scarcely any competition. Five gold medals were awarded in five different classes of plowing. In three of these there was but one entry, and in one of them a prize was awarded *without any trial*, there being no land suitable for the purpose.

The report, which occupies nearly 300 pages, gives us an account of Way's experiments on the absorptive powers of soils and the formation of double silicates, and tells us that "the success of the practical farmer depends almost entirely upon a knowledge of their principles." I published these experiments a dozen years ago, and studied them thoroughly, and consequently ought to be a very successful farmer; but I have been so busy of late years, trying to kill weeds and get the land dry and mellow, that I have thought very little about double silicates, except that I believed that if I could get manure into the soil it would not be apt to run away, especially if the land was underdrained.

The report further tells us that "soil in a finely divided state radiates heat much more rapidly than when its surface is hard and baked." One of my men, who knows more about digging drains than about chemistry, after the idea was explained to him, said he did not know about the heat, but he knew the *cold* could not get into loose soil as easily as into hard; and in digging ditches in winter he is careful to leave the "crumbs" of loose dirt on the bottom of the ditch, to keep the frost out. And I find that in the field which we summer-fallowed for barley, and a part of which was cultivated six or eight inches deep in December, the land is scarcely frozen at all, while unplowed soil near it is as hard as a rock. On land thoroughly cultivated in this way, a man could dig ditches nearly all winter.

There is one fact brought out by this trial that interests me very much, and that is, that

the speed of the team does not materially affect the draft. Thus a plow, cutting a furrow fourteen inches wide and seven inches deep and going at the rate of $1\frac{1}{2}$ miles an hour, required a draft of $484\frac{1}{2}$ lbs., while the same plow, cutting the same furrow at the rate of nearly 2½ miles an hour, required only 500 lbs. One plowed an acre in 4 hours and 25 minutes, and the other in 2 hours and 39 minutes. If I was a horse I would rather pull 500 lbs. for 2 hours and 39 minutes than $484\frac{1}{2}$ lbs. for 4 hours and 25 minutes. As much work would be done in the one case as in the other, and done better, for the extra speed would stir the soil more thoroughly. The practical conclusion is to put on three horses, if necessary, and never let a team walk slower than its natural gait. Horses on the road frequently walk three miles an hour with a load. If they walked at the same rate in plowing, allowing a reasonable time for turning, etc., they would plow an acre in $2\frac{1}{2}$ hours, with a furrow 14 inches wide. On my farm we do not plow an acre and a half a day, and yet men and horses seem to work hard enough. Why this discrepancy between facts and figures? I think the main reason is owing to the stones. Not that I have such an unusually stony farm, but that man and horses are never certain when the plow will strike, and consequently they have to go cautiously all the time. This, too, is the reason for the habit of putting the lines back of the shoulders in plowing—a practice which I most cordially detest.

It is more important for a farmer to know how to get out stones, and to have energy and determination enough to do it, than it is to know all about the absorptive power of soils.

Old horses that plow among stones are so afraid of being jarred that they will scarcely move. The wear and tear of harness, plows, cultivators, harrows, drills, &c., is certainly doubled on account of stones, and one would think that when a man gets a good rap on the ribs in striking a stone, he would be inclined to get it out. A sensible man will do so, a fool will swear at it and pass on. The one is just as angry as the other, but the one controls his anger and learns patience until he can remove the cause of his trouble; the other boils over and his anger escapes in jerks and blows on unoffending horses.

One of my neighbors, who formerly did nearly all his work with oxen, but who gave them up and bought a span of heavy Canadian horses, is about to return to the oxen. He says if you get the right kind and *know how to manage them*, they will do nearly or quite as much work as horses; they cost less; do not require so much care; there is no expense for harness; and they can be turned off to the butcher, generally with a profit.

On a rough farm, where there are stumps and stones, and more or less logging to be done in winter, especially on swampy land, a yoke of cattle is indispensable. But when the farm is cleared of stones and stumps, horses, it seems to me, are more profitable. Our seasons are so short, and wages so high, that it is very desirable to push forward the work rapidly. There is a great difference in cattle, just as there is in horses, but, as a rule, horses will get over the ground faster than oxen. If two horses cannot walk along with a plow or harrow at a fair rate, put on three.

The more I read of them, the more I am convinced that the Percheron horses, say half or three quarters blood, will prove to be just what American farmers need. When I read Mr. Du

Hüys's charmingly written and interesting work, "The Percheron Horse," I feared, from his remarks in regard to the climate of Perche (page 89), that when bred here they might lose some of their energy. But I have just read an article in the Journal of the Royal Agricultural Society of England, which indicates that we need have no fear on this point. Our climate is vastly more stimulating than that of England, and if this breed does not degenerate there it certainly will not here. Mr. W. Dickenson, the writer of the article, than whose there is no higher authority, says if he had not gone to the Paris Exposition in 1855, he "should have continued thinking there was no better class of farm horses in the world than the English." But in the streets of Paris he saw a class of horses that "astonished" him. "These horses, walking so nimbly with great loads of stone, were not so fat as our own favorites, but they seemed to me to be doing twice the work. Although leaner, they bore the strictest scrutiny; the more I saw of them, the more I admired them. Meeting Mr. Jonas Webb I called his attention to them. He said he had never seen such before; he had observed a horse taking into the show yard an immense load of provender, that astonished him beyond measure; he had resolved to try to buy him, but he lost sight of him that day and never saw him afterwards." Mr. D. obtained a stallion which he called "Napoléon," and says: "He has been at work on my farm ever since, almost always with mares. I have never had so good, quiet, active, and powerful a horse before. He is unlike our English cart-horses, for with great size ($16\frac{1}{2}$ hands high) and immense substance, he shows a dash of blood. He has an Arabian head, not small, but of fine character, well proportioned to his size. The neck is very muscular and well turned, the shoulders large, very deep, without lumps on the sides, and oblique,—such a shape as would not be objected to for a riding horse; the bosom open, the fore legs magnificent and very short, with great bone, hard sinews, and little hair upon them. His feet are perfect in shape, and perfectly sound in work, his back short, rather dipped, round-shaped ribs, large loins, rather plain, drooping hind-quarters, very large thighs, low down, and tightly joined together with prodigiously powerful, clean hocks, and very short hind legs, well under him. We never have had a difficulty with the engine or thrasher or with anything in the mill, that Nap could not extricate us from. His stock are as good and kind as possible. It is a saying with the men, that Nap's colts need no breaking. My mares are small and active; the stock are considerably larger than the dams, but so cleanly, that as foals they look more like carriage horses."

It is very evident that the Percheron stallion is what we want, to improve our race of farm horses. When grain and hay was cheap it did not make so much difference what kind of horses we kept, and how many of them. We could, perhaps, afford to let them lie idle half the time. But all this is now changed. Horse feed is expensive, and wages of the teamsters high, and it is very important to keep none but the best horses and to study economy in using them. I have seen a farmer draw a load of only 22 bushels of potatoes to the city, while another farmer, by having a large, double box, drew ever 50 bushels. And even this is a small load—only 2,800 lbs. for two horses. M. Du Hüys, in "The Percheron Horse" (page 69), says: "In London a traction of only 2,000 lbs. is required of a draft horse. In Paris the horses harnessed to the heavy stone carts are required to drag as much

as 5,000 lbs. each, and often more." And the testimony of Jonas Webb and W. Dickenson is to the same effect. In other words, a pair of Percheron horses draw a load of 5 tons, or more than 175 bushels of potatoes, or 166 bushels of wheat. It would take a farmer who goes down ten miles to the city with 22 bushels of potatoes *a whole week* to draw as many potatoes as a good span of horses would draw at one load. And as he pays 25 cents toll, and a man and team are worth \$4 a day, the cost will be:

6 days at \$4	\$24 00
Toll	1 50
	\$25 50
1 day and toll	4 25
Saving in delivering 132 bushels potatoes ..	20 25

It is a well-known fact that dogs wag their tails, and a philosopher once computed the amount of power in the aggregate, lost to the world by this useless habit, and found that it was sufficient to turn half the grist-mills in Europe. If he should figure up all the power we lose on the farm in the year for want of a little thought, he would probably tell us it would be sufficient to dig in a week or two all the gold there is in California, and make us all rich. But, joking apart, if other manufacturers lost as much time and power as some farmers do they would soon be ruined. We lose time in every way. We take a load to the city and come back empty, and then go empty to the city to bring back a load. We lose time in scraping dirt on to a road, to raise it a few inches above the water, while half the labor in ditching would take the water three feet below the road. We lose a great deal of time by being in a hurry. We have not time to oil the harness; to keep carriages clean and the nuts tight; to drive a hoop on a barrel or a pail when it gets loose; to put up tools and implements; to plant fruit trees, or take care of them. We have never time to attend to the many little things of the farm, and we lose more by neglecting them than we can possibly earn at steady work. I have known a farmer to go, all alone, into the woods to chop, and leave a stout hired man at home to attend to the stock and do chores!

Why Keep Up Interior Fences?

It is a common statement among farmers, especially in the Eastern States, and it is probably not a very exaggerated one, that it would cost more to-day to fence the farms in most counties than the land itself would sell for. This enormous amount of labor has been done gradually, and at seasons when there was little other work, and its great cost has not been felt. The annual cost of keeping fences in repair, and the labor required, all reduced to dollars and cents, as it ought to be, would constitute a more serious tax than most farmers would be willing to meet. And the question naturally arises, What is the use of all this? Why do we need so many fences? Pasture lands, of course, must be fenced, but in our opinion no others should be, or at least no others need be, except for the purpose of separating our meadows and cultivated fields from our own pastures, from the public highway, and from a neighbor's land. In expressing this opinion we base it, of course, on a conviction that mowing land should never be trodden by the hoof of an animal, except for purposes of fertilizing and harvesting the crop.

The cost of making and repairing fences, after all, is only a small part of the argument against their excessive use. They are disadvantageous in many ways: 1. They shorten the furrow and require much time to be lost in turning plow-teams, etc. 2. They cut up the

fair face of the farm into unsightly patches. 3. They prevent the adoption of the best systems of agriculture. 4. They harbor vermin. 5. The headlands beside them not only occasion a great waste of land, but they foster the growth of troublesome weeds, which spread yearly from them into the cultivated land adjoining.

Therefore, we say, do away with fences wherever possible; spend a part of the time, at least, that is now occupied by repairs, in removing them altogether; make the fields larger, and lessen the growth of troublesome weeds.

These remarks will naturally lead to the inquiry, How shall we get rid of the stones? and to the second one, Shall we use them in making underdrains? Stones may be advantageously disposed of in two ways: 1. Build them up into slightly, cylindrical piles in corners of the fields, and cover them with Virginia Creeper or some other vine. This is the easiest way to manage the question, and adds to the beauty of the farm. 2. Bury them in the ground. In this we do not recommend generally that they be used in making underdrains. The cheapest way is to dig holes and trenches, dump the stones in, and cover them up. Whenever tiles can be delivered on the farm for three cents a foot it will be much cheaper to drain the land with tiles than with stones, although these be dumped, ready for use, at the banks of the ditches, —cheaper in first cost, because the amount of excavation required for tiles is very much less than the cost of laying the stones; cheaper in the long run, because a well-laid tile drain is an absolutely permanent improvement, while the best laid stone drain is constantly subject to lasting and annoying obstructions.

Farm Bridges—How to Make Them.

A permanent stream is a fine thing on a farm; in fact, it is so anywhere. The longer we live, the more we love water—running water, springs, rills, brooks, rivulets. If the rivulets cross the farm, we are obliged often to cross them, and have our choice of doing so by a bridge or by a ford, which is deep in the spring, liable to be washed out or piled full of stones and gravel banks by summer and autumn rains, and icy and often impassable in winter. With a

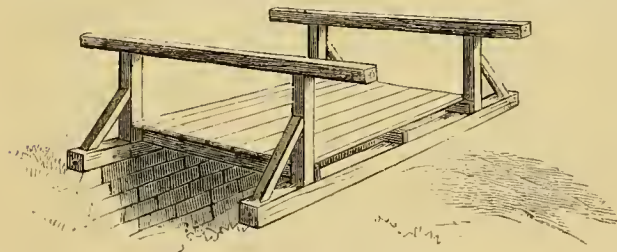


Fig. 1.—FRAME BRIDGE.

ford for wagons, we almost always need a foot-bridge of some kind in addition. Good bridges are, therefore, next to a necessity on a well-managed, well-watered farm. These are easily made when the streams are small and stones are plenty; for walls being laid on each side so as to give a sufficient channel for the water at its greatest rush, flat stones, rough, stone arches or timber, to be covered with planks, are laid across. When, however, the stream is wide or the channel deep, the bridge becomes an important structure, and, both for safety and durability, should be constructed with care. We show in figure 1 a substantial bridge-frame, made as follows: Two hewn or sawed chestnut, oak, or pine sills are laid upon the walls; in these, near each end, a post is set, mortised in, and braced

from the end of the sill. The two posts on the same side of the bridge are connected by a stout hand-rail, into which the posts are let two-thirds through, and pinned. Neither the mortises in the rails, nor the tenons in the posts should be cut before the sills are laid and the posts set, especially in the case of diagonal cross-

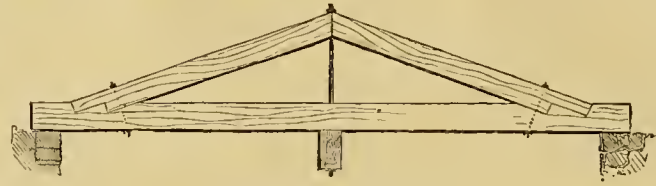


Fig. 2.—BRIDGE TRUSS.

ings, for a very little twist makes either the post or rail liable to split. When the hand-rails are on, lay the string-pieces and spike them to the sills and to the posts. They may be of chestnut, pine, spruce, or hemlock, and upon them lay the flooring of oak, chestnut, pine, or spruce plank, the thickness being governed by the amount and character of the travel which will pass. White oak is, no doubt, the best flooring, if we regard simply durability, but it is objec-



Fig. 3.—STRENGTHENED STRING-PIECE.

tionable when heavy loads have to be hauled up by teams standing upon the bridge, as is often the case. Oak, unless subjected to constant wear, becomes so hard and smooth that horses slip badly upon it. This plan for a bridge is susceptible of any degree of rustic or other ornamentation; it is simple, durable, and good enough for streams not so wide that the string-pieces will vibrate perceptibly under the passage of heavy loads. For wider streams heavier stringers stiffened in some way are employed. Figure 2 represents a good form for an end string-piece of a bridge sixteen to thirty feet long. The truss-beams are about half the size of the main timber, and are scarfed or notched to bear against its ends, while their upper ends, bearing against each other, are connected by a long bolt or rod having a screw and nut at one end, and a broad head and washer at the other, to a cross-beam placed athwart the bridge and under all the string-pieces. The rod is of three-quarter-inch to inch iron, and passes through the main-timber and cross-pieces. Bridges may be made with three of these trusses for string-pieces, but they are always awkward in the middle of a bridge, and a better way is to stiffen a timber by a long iron rod passing diagonally through its ends and under the cross-timber, in the manner shown in figure 3. Such timber may be used in any desired number under the floor of the bridge, the planks being spiked directly upon them. Such bridges are usually made of sawed timber, and are not easily ornamented in a simple rustic way. They are, however, adapted to any desirable "architectural" ornamentation.

Rich Grass.

There is one point in our December chapter of "Walks and Talks on the Farm" to which we desire to call especial attention, since it is a point that farmers are apt to overlook, and one which their best interests require that they should always bear in mind. It is, that one ton

of very rich hay is more economical to feed than two tons of coarse and over-ripe strawy hay.

In feeding the latter it is necessary, in order to have a sufficient amount of nutriment, to add grain to the fodder; while in the other case the hay itself is so rich that in consuming the same weight even more extra nutriment than is contained in the added grain may be assimilated. This the article itself tells, and tells very clearly. We only desire to carry the argument to its legitimate conclusion, which is, that in all cultivation of the farm, year after year, it should be constantly

borne in mind that the cultivation by which we rid the land of weeds and foul grasses, for the benefit of the growing crop, and the manure which we add for the increase of the yield, tells with great effect not only on the crop which we are raising, but on the future capacity of the soil to produce more nutritious grasses when it is permanently laid down.

Furthermore, it indicates very strongly an additional reason for avoiding excessive grain growing and the too common practice of laying down land to grass after a series of exhausting crops, trusting to get the little manure that remains in the form of poor hay, and then to have the very last drop of life-blood sucked out of the impoverished land by poor and stunted pasture grasses.

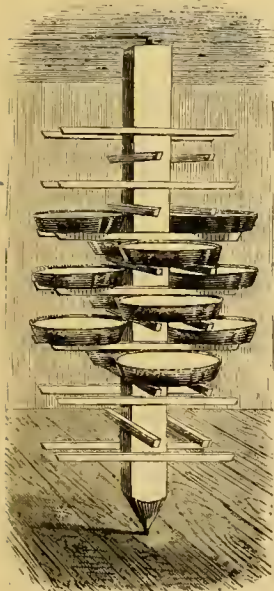
Faith in Farming.

The sight of a new barn eighty feet long by fifty in width, built in the most substantial manner, and with all the appliances for handling and storing crops easily, and for making manure on a large scale, is an indication of that faith which is so often wanting upon the farm. There is a man who believes in improved husbandry, and is willing to invest ten thousand dollars, or full half of his capital, in a good barn. He has no doubt that he can so manage his farm and barn as to get back the interest on all the money invested in it. In his view the barn is worth more to him than the same amount of money invested in bank stock or in Government bonds. This kind of faith is still the exception among farmers. Very few live up to the light they have, and are willing to invest their money when they have every reason to believe it will pay well. They know very well the efficiency of well-made yard manures, and feel the need of more of them every year. Yet they hesitate about putting a cellar under the barn, or building sheds and hovels around the yard, for the purpose of sheltering the manure, and the men while they are at work upon the compost heaps in stormy weather. They have muck and peat enough to learn its great value, and yet they hesitate about using labor enough to keep a large stock always on hand. Few intelligent men doubt the great waste of feeding cattle at the stack in the winter, and yet they do not provide the necessary barn room or sheds to protect the animals and save the soiling of the fodder. They follow the old wasteful methods mainly, because custom has made them easy. It is conceded by all who have tried them, that we have new varieties of potatoes more prolific than the old, much less liable to rot, and of fair quality for the table. And yet the mass of farmers cling to the old, in spite of the rot, because they have a well-established reputation in the markets, and sell well when

they can be raised. They hesitate to buy seedlings that have been thoroughly tested and are fully indorsed by our best horticulturists. This want of faith is the reason, mainly, why agriculture does not improve more rapidly, and why other callings are crowded with adventurers at the expense of the farm. The merchant makes ventures, whenever he sees a good opportunity, not only investing all his spare capital, but often all that he is worth, in a single enterprise. The ventures of the farmer would never be so largely and suddenly lucrative as those of the merchant sometimes prove to be, but then he runs no such risks. It is safe to make ventures in barn cellars, and in the very great enlargement of the manure heap, in underdraining, in lime and clover, in improved tools and stock, and in new varieties of fruits and vegetables. We should show by our investments that we have faith in our business, and that we expect to make a living by it, and get handsome returns for our capital. This done, our young men will quit measuring ribbons and tape, and go to measuring land and working it. Let us have faith.

A Very Good Milk-rack.

A note came to us, signed A. W., without date or other signature, containing an excellent idea for a milk-rack, which we have not met with elsewhere. The writer describes it as a 6x6 pine stick, placed upright, having slats of half-inch material nailed up on each side of the post. Two pans of milk are supported by two such slats on opposite sides. We have had an engraving made which scarcely needs any description, and in it suggest a slight improvement upon the plan of our correspondent—namely, putting the post upon a pivot, so that it will revolve. If



MILK-RACK.

arranged in this way, the cream pot need not be moved in skimming a whole rack full of pans. One advantage of such a rack over shelves is, that the air has free play under as well as over and around the milk.

SUMMER-FALLOWS FOR WHEAT.—J. B. E., of Monticello, Ind., writes: "Neighbor Keener had a piece of wheat sowed on summer-fallowed land, one-half of which was plowed the second time. The six acres plowed but once yielded 23 bushels per acre. The six acres plowed twice yielded 38 bushels per acre. He sold the wheat for \$2 per bushel, and thus received \$180 for about three days' work with a man and team." Farmers differ as to whether it is better to plow a so-called summer-fallow for wheat more than once. Some, who have had considerable experience, contend that if the land is broken up with care in June, and the cultivator and harrow are used freely afterward to kill weeds and mellow the surface three or four inches deep,

this method is better than a second plowing. This may or may not be the case. It depends a good deal on the nature of the soil. One thing is sure, it is vain to expect the full profit of a summer-fallow unless the soil is thoroughly worked and the weeds destroyed. If this can be best done by a second plowing, well; if by cultivating and harrowing, that is well, too. The method which will develop the most plant-food and clear the land most thoroughly is the best.

Improving our Stock of Common Fowls.

While we advocate the introduction of new and improved breeds of poultry, we would still more earnestly urge our readers to improve their stocks of common fowls. It often happens that when a pair of chickens or ducks are wanted for dinner the best of the lot are selected—which is very nice for the present time, but ruinous for the future. A better plan is to select *the worst*, and if not fat enough—as they probably will not be—shut them up by themselves for ten days or two weeks, and feed them all they will eat. Or select the best and keep them separate for breeding stock.

A selection of cockerels for stock birds may be made by the time they weigh one and a half or two pounds, and are fit to market as broilers. Large, full-breasted, broad-backed, flat-iron-shaped, strong-limbed, small-headed birds should be chosen. They will, of course, be taken, if possible, from the earliest broods, and thus come from the best early-laying hens. It makes a great difference in the stock what eggs are set; those of many hens never ought to be hatched.

It rarely pays to winter more than twice any but very superior hens, of choice breeds, and throwing well-marked chickens. Keep only very good common hens over winter, but thin out the ranks and fill them with early pullets. There is always some member of the family who knows more about the fowls than all the rest. Summon that one and any others interested. A good word may be said for some old hens that might otherwise be condemned, and bad traits or shortcomings recollected in others that a superficial "scale of points" would induce us to retain. A hen that deserted her nest, or is a special nuisance in the garden, or is a poor layer, or a bad mother, or that kills the chickens of other hens, should have little time wasted on her care. Away with her! Those that are known to be good layers will be entitled to much consideration, and this point being established, good size, good shape, and a tendency to fatten, must be looked for. The latter quality is very desirable, provided the hen is also a good layer. But hens that lay a great many eggs are seldom inclined to fatten rapidly, though the two qualities may be combined.

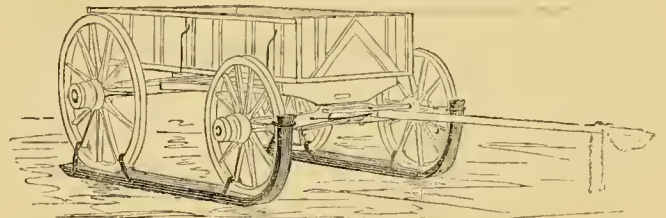
In selecting pullets, one should be guided by the character of the hen that laid the egg in each particular case, if possible; by their early maturity, large size, perfection of general characteristics, and by their health and vivacity. Especial points are a full breast, straight breast-bone, a flat back, broad between the shoulders, deep body, small, short, and delicate legs and feet, small head, full, clear eye, and smooth, unruffled plumage. Such will probably be gentle, quiet, and familiar; if not, these points must be sought, for a quiet disposition is a great point in

favor of any hen. Our object will be attained if we induce our readers to attend to this matter. Let one select the best according to his own notions, and he will be astonished at the quick time in which he will have a superior lot of fowls.

Although great and rapid improvement may be made by careful selection and the occasional interchange of eggs with neighbors, or an exchange of cockerels, (which is, perhaps, a better way of getting fresh blood,) yet no way is nearly so rapid as breeding from cocks of some pure breed, well adapted to our wants, for the improvement of our dunghill fowls in all useful qualities,—hardiness, earliness, size and eggs combined. The Brahmas and Cochins undoubtedly are the best with which to cross. The Gray Dorking cross of the first season is less hardy, but superior as a table fowl. The principles applicable to breeding cattle, sheep, and swine, are perfectly applicable to poultry also.

Wagons Upon Runners.

In the January number, page 15, is an article upon the conversion of wagons into sleighs. Another method, occasionally resorted to, is worthy of notice, as being sometimes convenient under circumstances similar to those specified in the former article; that is, when accidentally caught away from home upon wheels, by the fall of a great depth of snow. There is seldom real necessity for putting a wagon upon runners, but if an occasion occurs, as when the snow is soft and deep, the labor is not much, and the relief to the team may be very great. Two stout hickory or ash saplings are taken, smooth-



WAGON ON RUNNERS.

ed upon two sides, and the points marked where the wheels will rest when placed upon them, as in the accompanying engraving, the butts being to the front. If the butts are not placed to the front the sticks must be squared throughout the whole length. When the places for the wheels are marked, grooves may be cut for them to stand in, and the poles may be shaved down in front so as to bend. The runners are fastened to the wheels by boring holes through them and winding stout iron wire many times around the felloes and through the holes in the runners, the bent ends being fastened in the same way. Runners which are narrower in front than behind are often very hard on the team, especially so when running in frozen sled tracks.

The Best Way to Store Manure.

Farmers are often perplexed as to the best means for storing their winter-made manure. As an almost universal rule they seem to have fixed upon the side of the barn where there is the greatest drip from the eaves. This practice is so evidently a wasteful one that more careful men adopt various devices to avoid the excessive leaching of more than an ordinary rain fall. They pile their manure in large heaps in the field, put it under sheds, deposit it in cellars,

and distribute it in small heaps on the land where it is to be used during the next season.

The practice of earing manure directly to the field where it is to be used is becoming more and more common and spreading it broadcast, to be plowed under or harrowed in in the spring.

The efforts of agricultural chemists and agricultural writers during the first fifteen or twenty years of the existence of the science of agricultural chemistry, were devoted chiefly to an endeavor to discourage this latter practice. They insisted that the loss by evaporation was so great that the farmer could hope for only a tithing of the benefit to be derived from a more careful use of his fertilizers. During the past ten years, however, agricultural writers have had their eyes opened to the fact that this opinion with regard to loss by evaporation was probably wrong.

The very careful experiments made by Dr. Voelcker at the Royal Agricultural College at Cirencester in England, prove clearly that the very best place in which manure can be put, both to prevent loss and to insure the even distribution of its soluble and fertilizing parts among the particles of the soil, is on the surface of the field where it is to be used, spread as evenly as possible, and without regard to loss by evaporation, it being a fact that there are very few volatile substances developed in the decomposition of manure, except when it is thrown together in such masses that its decay is attended with the evolution of sensible heat. Of course, it would be folly to apply manure in this way on lands which slope so rapidly as to suffer seriously from surface washings, or on fields so situated that they receive surface wash from other lands lying above and adjacent to them. The best receptacle for manure, until it can be hauled out and spread as recommended, is a cellar directly under the animals; the next best, a well-covered shed behind them; the next, a well-built heap so situated as to receive no water except the actual rain fall upon it. Almost the worst of all is a barn-yard where the manure is being constantly turned over and disturbed by the tread of cattle, exposing freshly decomposed parts to loss by evaporation; and the very worst of all is under the drip of a barn roof, especially where there is a conveniently arranged gutter to carry into the highway, or on to a neighbor's field, or even upon one place on our own fields, the brown liquor which contains the most valuable constituents of the heap.

Wisconsin Cattle Stables.

A correspondent of the *American Agriculturist*, Mr. G. B. Gray, of Green Lake County, Wisconsin, sends us a drawing and de-

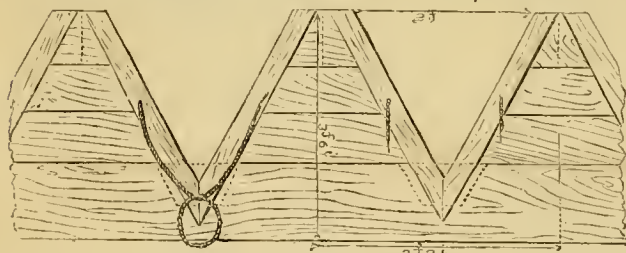


Fig. 1.—WISCONSIN COW STABLE.

scription of the mangers in his cow stable, showing also his method of tying. The peculiar advantage of the plan is that no divisions between the stalls are needed, and it is impossible for cattle to throw the fodder out of the manger. He writes as follows: "I send you a plan of mangers, such as we are using here. They are made of common inch

boards. The dimensions, or essential points, are given on the sketch; there need be no division between them, the cross board nailed on the top to support the front being sufficient. A feed box for bran or meal is shown by the dotted lines in the front view, figure 1. I claim the method of tying as peculiar, and not patented that I know of. This I have found not only convenient,

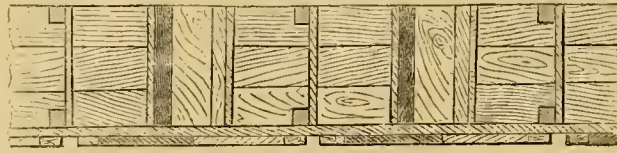


Fig. 2.—MANGER SEEN FROM ABOVE.

cheap and secure, but comfortable for the cattle. It requires about eight feet of five-eighths inch rope. The bight of the rope makes a noose by having a hard knot on one side and a loose knot on the other; the hard knot is pulled through the loose one, so as to enlarge the noose, which is put over the cow's horns, the hard knot drawn back outside, the loose one pulled tight, and the cow is fast. No matter how much one cow may be disposed to hook her neighbor, she cannot do it; at the same time her head is free, and she can feed and lie down comfortably. Instead of the noose, a leather strap or a chain with a strap to fasten to a neck-strap would be better, but a little more expensive.

"Figure 1 exhibits a view of the manger from the rear of the stable. Figure 2 is a view drawn to the same scale representing the mangers as seen from the floor above looking directly down."

High Farming.

American agricultural writers have, perhaps, been too chary of their discussions on the subject of High-farming. While it is well to present to country readers chiefly such matters as are of the most vital daily interest to them, we think that it is time that a decided reform in this direction were instituted, and we propose to make good our opinion by laying before the readers of the *Agriculturist* some of the facts about what is known as "High-farming," and some of the reasons why it should be the goal toward which all farmers should aim.

High-farming is always good farming, but good farming may exist without being high-farming. The idea on which high-farming is based is, that every dollar a farmer has invested in his business, whether it is in land, implements, soil-improvements, live stock, or facilities for some special cultivation, should be made to produce the largest possible yearly income, both in the form of money received and in the increased value of all stock in trade. As an element of its success it must include a comprehensive and carefully detailed system, which allows no single dollar's worth of produce or of opportunities to fail to produce the largest result. This is all that the expression "high-farming" really comprises; and truly there is no item in the specification which can be objected to

by any farmer in the land. The extent to which any individual may apply this criterion to his own business must depend almost entirely on his location, his capital, and his circumstances. A farmer in North-western Missouri lacks many of the advantages which only a large and near market can give, and which are necessary, to enable him to reap the largest re-

turns from his business. The tenant of a hired farm, or the occupant of a new one, will undoubtedly find himself deprived of a majority of those conveniences for the management of his operations, which would be necessary to enable him to adopt the system of high-farming in its completeness. And almost all of us, in this country, lack the capital which is the motive-power of all high-farming.

Having suggested what we believe high-farming to be, let us now state what we are quite sure that it is not. It is not the sort of cultivation and management that is usually adopted by gentlemen of wealth, who retire

from business in the city and go to the country to take up farming as an amusement. These men, too frequently with little knowledge of farming, but with a superabundant capital, commence their improvements by the construction of very expensive and needlessly elegant farm buildings, by the laying out of a good part of their grounds in an ornamental manner, by the purchase of very expensive but not very judiciously selected live stock, by the employment of managers and laborers who are either not sufficiently skillful, or not sufficiently industrious to be well suited for their work, and by the purchase of a general assortment of improved implements, while they lack either the knowledge or the firmness to compel their managers to keep them in constant and profitable use.

Such men generally flatter themselves that they are "high-farmers," and that they are conferring a great benefit upon the country, or at least upon their own neighborhood, by setting an example of improvement. In our opinion, they are doing nothing of the kind; and while we have no sympathy with the sneers that old-fashioned people are disposed to bestow upon real improvements, we heartily concur with them in their opinion concerning this class of men. If a man has a large fortune, it is, of course, nobody's business but his own how much of it he spends in agricultural experiments, foolishly or otherwise; but he goes a little too far when he expects sensible, practical men to accept his conduct as an example for themselves.

High-farming requires, at least, three things: 1st. A perfect soil. 2d. Buildings and implements exactly adapted to their uses. 3d. Good means for disposing of the soil's products.

The soil should be, first of all, well drained, either naturally or artificially, it matters not which. No crop should find its roots checked in their downward passage in search of moisture or nutriment by a subsoil which too much water makes impenetrable by them. Nor should the rapidity of their growth during the growing season be lessened by the chilling influence of the evaporation of water from the surface of the land. Furthermore, when the time comes to plow, to plant, to harrow, to cultivate, to hoe, or to harvest, the farmer should never be prevented for more than one or two days after the heaviest storm from performing the work because the land is too wet for it. If he is so prevented, the whole plan of his season's work is thrown out of gear; and he not only fails to make a profitable use of the days immediately succeeding the storm, but work which should then be done interferes with other work which should be done on subsequent days, and it requires more time in the doing of it. For instance; take the case of the first hoeing of corn. As soon as it is in condition for this treatment, it should receive it; if the land is undrained, it not unfrequently happens that a heavy fall of

rain puts it into such a condition that it is impossible, or at least injudicious, to work it for a week after the appointed day. During this week, weeds grow and the evaporation of water from the surface causes it to become baked and hardened, so that when the work can be done it requires greater force and more time for the eradication of weeds, which, a few days earlier, might have been killed in their germination.

The soil must be rich, that is, it must contain, within the reach of the roots of the plants, all that they require to enable them to assimilate in the most rapid manner possible that larger part of their nutriment which they gain from the atmosphere. Not only should it be rich, loose, and friable near the surface, but the sub-soil itself should be so loosened, by either natural or artificial means, that the deeper reaching roots will have no difficulty in descending to a point where they may, during the driest season, find the moisture needed for the largest growth. By the richness of the soil we do not mean simply such an accumulation of stimulating manures as will force the growth of luxuriant stems, but an ample store of those mineral matters which are needed for the strengthening of the stem, and for the large and perfect development of the seed, or, in the case of root crops, for the storing up of a large quantity of nutriment in them. This bountiful supply of mineral matter is necessary to success in high-farming, and, indeed, no *good* farming, whether it be high-farming or not, is possible without it.

The buildings of the farm should comprise everything that is necessary for the safe storing of all crops which require shelter; for the economical handling of the supply in the feeding of animals, or in the preparing of grain, etc., for market; for the comfortable and well-ventilated shelter of animals; and for the perfect protection and preparation of manure. About the house and dairy, also, everything should be so arranged that the largest amount of work may be accomplished with the least possible waste of time and energy. The implements with which the soil is to be cultivated and the crops harvested and prepared for market or for use should all be such as to save labor, and to enable every thing to be done in the best manner and at the right moment of time.

The disposition of the crops should be well considered. If it will pay better to sell everything that the soil produces, and to buy back a sufficient quantity of foreign manure to keep its fertility constantly increasing, rather than to feed the crops out on the farm, and to sell them indirectly in the form of butter, cheese, beef or wool, this should be done. There is no sensible foundation for the idea that every farm that is devoted to the production of hay, grain, tobacco, or other crops for sale, is on the sure road to exhaustion. The soil is, in a measure, exhausted by the simple raising and removal of the crop. After the crop has been taken into the barn it really makes no difference, so far as the soil is concerned, whether it is consumed there by animals, and the residuum returned to the land, or whether it is carted away and fertilizers equivalent to that residuum brought back and applied to the land. Whatever pays the best is the best, a part of the pay always being taken in the form of an improved condition of the land.

The moment we step beyond these three leading requirements, and put fancy gilded weather-cocks on our barns, expensive hard wood finishing in our stables, too much ornament on our implements, too expensive or unprofitable animals in our stalls, or do any of the things which

constitute what is properly designated as "fancy farming," we recede from the position of high-farmers, and in so doing not only lessen the value of our example for others, but make for ourselves a plaything of that which we profess to call a business occupation.

Above and beyond all this, high-farming requires a high-farmer; a man whose best energies are devoted to his business; who allows no single improvement in the agriculture of the world to escape his careful attention; and if it promise an improvement in his own practice, who does not, after cautious experiments, adopt it into his system. There is an old and good maxim that "there is no manure like the master's foot." And every day's hard work which the proprietor himself performs in the field with his men will profit him very much more than the simple amount of work accomplished. It will give him a greater familiarity with the daily operations of his farm, and a far better influence over his assistants, than he can get in any other way. At the same time he cannot afford to devote so much of his time or of his energy to field labor as to lessen in the slightest degree his capacity for an intelligent management of every detail of his operations, and for a keen foresight which shall constantly compass, not only the operations of the day and of the season, but the execution of a well-laid and well considered plan whose great results lie in the distant future.

Winter Work.

We fancy that our readers are well-nigh tired by this time of the rules that we have felt it our duty to din into their patient ears, about painting tools, oiling gudgeons, tacking fast loose shingles and clapboards, and mending up wife's wash bench, and all that; and about the turning, hauling out, and spreading of manure heaps, gathering leaves, cutting fodder, sorting apples, and the whole of the long list of things which it is necessary for farmers to do, and which it has been, and always will be, (more is the pity), our duty to remind them of.

Just now we are going to say never a word about all that, but only to suggest that there is other work, which the farmer can only attend to when somewhat at leisure, and which is more important to his "getting on" than any of the out-of-door or indoor patching and mending.

Now that winter has fairly closed in, and winter arrangements are comfortably settled, every farmer,—at least every farmer who cares enough about good farming to read the *Agriculturist*,—should set vigorously about the cultivation, planting, and enriching of that other farm from which his greatest satisfaction,—aye, and his most *paying* crops, too,—must come.

Dickens says: "The part of the holding of a farmer or landowner which pays best for cultivation is the small estate within the ring fence of his skull." It is mainly this small estate to which our winter work should be devoted. Of course, our other duties must not be neglected, and among other duties we include the very important ones of visiting and of entertaining friends, and of making life generally pleasant and cheerful for ourself and for the family.

But, after all this is done, there are hours passed in twirling the thumbs over the fire, in unprofitable twaddle at the store or post-office, and in idleness about the house, which ought to be devoted to better things.

We are often told that farming is the noblest, as it is the freest, of all occupations. That depends. There is nothing especially noble in

the life of a farmer who drives his business at the pace at which he drives his oxen, and who gives about as much thought to the one as to the other; who wastes one-half of his labor in raising crops under unfavorable circumstances, which he does not know or care how to improve; who wastes one-half of his crops in ill-managed feeding; and whose years, from one end to the other, are spent in a struggle to make both ends meet, and to scrape together a few dollars, to lend out on bond and mortgage.

On the other hand, no life is more noble than that of an intelligent farmer who commences as a young man with straitened means and a poor farm with a mortgage on it, and who, by activity of mind and body, makes every year a marked improvement in the productiveness of his land, in the character and thrift of his stock, and in his knowledge of his business; who sees where he can make an improvement, and is judicious in procuring the means for making it.

Such a man as this will get more satisfaction and happiness out of his life as a farmer than he could get in any other avocation, and he will count far more in the general advance of civilization. The other will get no satisfaction, and only an animal sort of happiness, and when he dies the cause of the world's improvement will not have sustained a loss.

The best index to the difference between these two classes of men is to be found in the manner in which they pass their leisure winter hours.

The one will simply doze them away, coming out in the spring as nearly like what he was the spring before, as it is possible for him to do. The other will turn his spring furrow in pursuance of well-laid plans for the season's work, and with a mind eager for their execution.

Let the loose clapboards be not neglected, and give the stock a full meed of intelligent care, but above all let the farmer keep his own mind in the most perfect trim, and bestow a good share of cultivation on the only part of his possessions to which his title is indefeasible.

Clover—How it Benefits the Land.

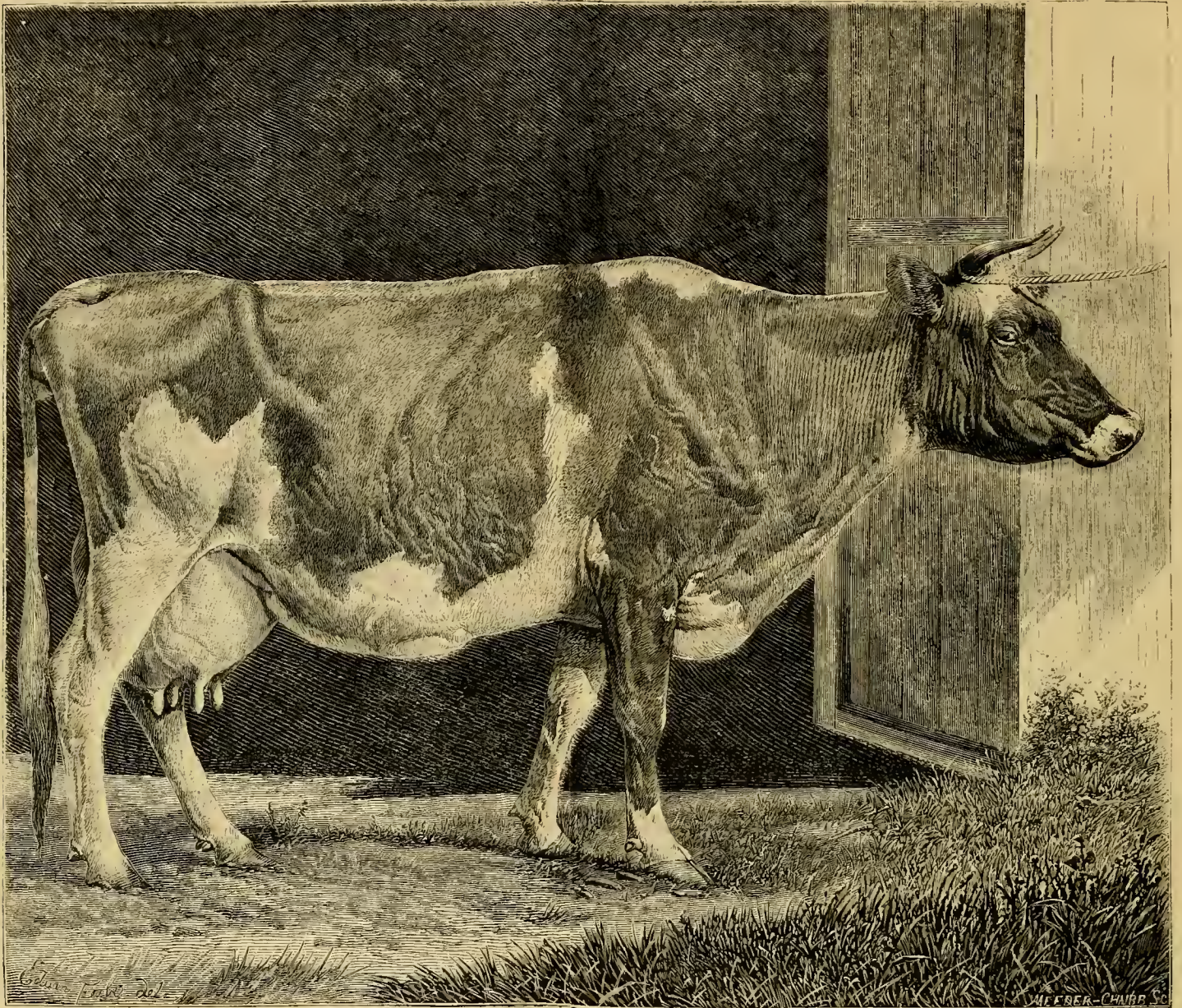
The reason generally given for the beneficial effect of clover is that it receives most of its nutriment from the atmosphere, and that, consequently, when either the whole crop or the heavy roots and stubble left after mowing are plowed under and allowed to decompose in the soil, this matter, taken from the atmosphere, adds to the resulting fertilizing elements.

This is perfectly true, but it is also true, and true in almost equal degree, of every plant that grows. In "How Crops Grow," p. 381, table ii, the number of pounds of *earthly* matter in 1,000 pounds of different crops, coming under the head of "green fodder," is given as follows:

Meadow Grass.....	23	Wheat.....	22
Rye Grass.....	21	Clover.....	13
Timothy.....	21	Peas.....	31
Oats.....	17	Rye Fodder.....	15
Barley.....	22		

All of the rest comes either directly or indirectly from the air, and the difference in the amount of atmospheric matter assimilated by meadow-grass and by clover is the difference between 977 and 987. Obviously, then, the argument in favor of clover, that it derives most of its nutriment from the atmosphere, applies with equal force to every other crop.

The beneficial effect of clover must be sought in some other circumstance attending its growth, and, so far as science has been able to discover the difference between it and many of our other



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THE QUEEN OF JERSEY COWS, "DUCHESS."—FROM A PHOTOGRAPH.—Engraved for the American Agriculturist.

crops, its advantage lies, first, in the fact that it has exceedingly strong tap-roots, which strike deeply into the subsoil and extract from it mineral food, which is either out of the reach of the roots of many other crops, or exists in the soil in a condition not easily available by them; and second, in the supposed, perhaps in the demonstrated, power of clover to absorb nitrogen directly from the atmosphere. Whether clover does really absorb the pure nitrogen of the air or not, it is a well-established fact that from some source, even when not manured with nitrogenous manures, it very readily takes up large quantities of nitrogen and stores a considerable proportion of it in its roots.

Therefore, when clover or clover stubble is plowed under, the roots and what is left of the plant itself, being mixed with the soil on its decomposition, yield ammonia and mineral matter in a form and in a situation best suited to the needs of succeeding crops grown.

In addition to this, the long, stout roots have a very great effect in ameliorating the tenacity of heavy soils, and the decomposition of the lower ends of the roots, below where they are cut off by the plow, opens inviting channels and new fields of exploration to the more delicate roots of those plants which succeed them.

Perfection in a Milch Cow.

We seek in a milch cow, above all other qualities, rich milk in abundance; everything else is secondary. The more milk, if it be rich, the better; and the richer, the better, if there be enough of it. Such a cow is a machine formed for converting fodder into milk and butter, chiefly "by art and man's device." The original cow was very different; she fed, and laid on flesh and fat, and bore calves, and produced milk, and roughed it in all weathers, and was half-starved half the time. Man's necessities and the art of breeding have produced the change. Where shall we stop? What is the limit of milk production and butter yielding? There is a limit in the nature of things; and if that be reached in one case, we shall still strive to breed so as to bring the average given by all cows of the breed as near as possible to it.

Several months since Charles L. Sharpless, of Philadelphia, an enthusiastic admirer of Jersey cattle, sent us a magnificent "imperial photograph" of his beautiful cow "Duchess," the finest picture of a milch cow we ever saw. The engraving which we have had made, though lacking in the softness and mellow beauty of the photograph, nearly satisfies us, and reflects

great credit upon both draughtsman and engraver. The cow is eight years old and was imported last spring with eight others. She calved on shipboard two weeks before landing, and two weeks after landing, gave 21 quarts of milk per day, on grass alone, and in two separate trials of a week each, on the same feed, made 13 pounds of butter. Many a cow may be fed up to give more milk, and a few may make more butter, with all the oil-meal, roots, and grass, they can eat, but we have never known it done on grass alone. She is therefore a good cow, and her picture shows her to be no less beautiful than good. We give Mr. Sharpless' enthusiastic, and we believe, truthful description: "Size, below medium—would be called small; color was dark, but has been growing lighter, and is now fawn; skin, yellow and mellow; hair, soft, with satiny coat; inside of ears, bag, and teats, deep orange; horns, semi-transparent, not amber, but butter-colored; hoofs, yellow; eyes, full and soft; neck, very thin; crops, thin and sharp; capacity of the barrel enormous, in contrast with her fine head, neck, tail and legs; and she has a docile, fine, nervous organization." Such an animal must come very near the standard of perfection in Jersey cows. Some good breeders have marked her fully up to it.

Cannas as Ornamental Plants.

BY M. JEAN SISLEY, LYONS, FRANCE.

[The following plea for the cultivation of the Cannas, from our correspondent, a distinguished French horticulturist, we can heartily endorse.

They are, however, more cultivated now than at the time to which he alludes, but not nearly as much so as they should be, and we hope to see them take a place among our most popular plants.—Ed.]

The Canna was first introduced into Europe about three centuries ago, under the name of *Cinna Indica*, and although nothing positive is known about its introduction, it is generally admitted that it was brought by Spanish missionaries from Brazil, where it grows abundantly in marshy and rather shaded places. This species is still known and cultivated in botanic gardens and is considered as the original type, although some others are described as distinct species, like *C. flaccida*, *iridiflora*, *discolor*, and *glauca*, which, in the present state of botanical science, can be admitted (under reserve) on account of the great difference existing between them. They are all natives of South America, except *flaccida*, which grows in Florida and South Carolina. A great many others, although described by some botanists, who are fond of creating species, as distinct ones, must, I think, be considered as varieties from the original type, influenced by climate, culture, and other unknown causes. But a discussion on this subject would carry me far away from my main object, which is to call the serious attention of horticulturists and lovers of beautiful plants to the Canna. When I visited the United States, eight years ago, I was surprised not to see them in gardens, knowing that they grow wild in the country. The reason of their omission in American gardens, and even in your splendid Central Park (in 1860), is very likely the same which deferred their cultivation in European gardens.

Cannas had been cultivated in hot-houses until 1846, it being the general opinion that plants from tropical climates could not grow in the open air in colder countries, when Th. Année, who had been for several years French Consular Agent at Valparaiso, brought with him to Paris a numerous collection, of which he planted a portion in the open air. This trial succeeding, he successively planted them all out, and in

1848 he tried to cross them by artificial impregnation, and obtained the beautiful *Annéei* from *Indica*, fecundated by *Nepalensis*. But it was not before the creation of the fine public squares of Paris, in 1855, that the Cannas were cultivated in the open air to any extent. Baréillet Deschamps, the

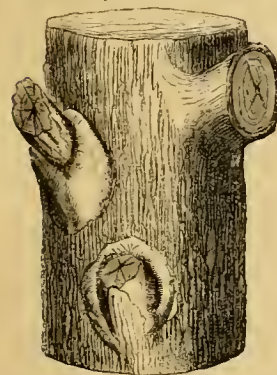


Fig. 1.—BAD PRUNING.

able principal gardener of Paris, not minding the violent opposition he met with, continued *Année's* experiments, and was soon followed by several amateurs and horticulturists.

This induced *Année* to continue his artificial fecundations in 1857, at which time he obtained *Warsewiczoides Annéei*, which he crossed again with the other original sorts, and obtained several very fine hybrids. Since that time several horticulturists have continued the same prac-



THE GIGANTIC CANNA—(*Canna gigantea*.)

tice, and have produced a great number of fine varieties, far superior to the old type, and which are now cultivated throughout Europe.

The most remarkable and distinct of the varieties now cultivated in Europe are:

- | | |
|---------------------------------|-------------------------------|
| <i>Annéei</i> , | <i>Gnayaquilla</i> , |
| <i>Aurantiaca splendida</i> , | <i>Insignis</i> , |
| <i>Annéei rubra</i> , | <i>Iridiflora rubra</i> , |
| <i>Anguste Ferrier</i> , | <i>Jean Vandeal</i> , |
| <i>Bihorell</i> , | <i>Liliflora</i> , |
| <i>Barilleti</i> , | <i>Maréchal Vaillant</i> , |
| <i>Daniel Hooibrenk</i> , | <i>Nigricans</i> , |
| <i>Deputé Henon</i> , | <i>Picturata nana</i> , |
| <i>Edouard Morren</i> , | <i>Picturata fastuosa</i> , |
| <i>Flaccida</i> , | <i>Premices de Nice</i> , |
| <i>Grandiflora floribunda</i> , | <i>Purpurea spectabilis</i> . |

They have the advantage over a great many ornamental plants, that although issued from the same type, they differ very much in height, as well as in size, form and color of the foliage, color, size, and character of the flowers.

No plant can be compared to the Cannas for ornamental qualities, in a small garden as well as in a park. In a small garden a single plant will, on a grass plot, produce a beautiful effect, the flowers succeeding without interruption.

In a large garden, or a park, twenty, fifty, or a hundred Cannas, disposed in a semicircle, having in the background a plantation of tall evergreens, pines, etc., when well grouped, with the higher ones from 9 to 10 feet at the further end, and the smaller ones of 3 to 4 feet in front, will produce a really splendid sight.

The leaves vary in color, from pale green to

dark purplish brown, and in form from those narrow and pointed, to large and broad ones, some being erect, others gracefully inclined.

The flowers vary from pale yellow to dark crimson; some are striped and spotted, and in point of form equal to the finest *Gladiolus*.

The culture is most easy. Treated as Dahlias, they will flourish everywhere, and offer this advantage, that they will succeed as well in the most sunny position as in a shaded one, and are not affected by the neighborhood of trees, provided they are supplied with plenty of water and liquid manure. They can be planted out as soon as danger of frost is over, and when in autumn frost has killed the foliage, the roots must be taken up and put in a dry cellar or some other sheltered place. The propagation of the Canna is also very easy, it being simply to divide the roots at the time of planting.

Pruning—The Why and How.

So many letters have been received, the purport of which is, "How shall I prune my trees?" that we propose to devote a few articles to pruning. These queries come from those who find themselves in charge of trees for the first time, and our articles will be written for such, rather than for the experienced orchardist. Many think that trees must have an annual pruning, just as in old times people used to consider it necessary to have an annual bleeding. Scarcely any subject connected with horticulture has been more discussed than that of pruning, and the novice is bewildered when he reads that he must prune to make a tree grow, and prune to check luxuriant growth; prune a tree if it bears too little, and if it bears too much—prune it. All these are correct, but one had better not prune at all unless he has some idea of what he is to do it for. It will be seen that we cannot answer in general terms the question, "How shall I prune my trees?"

as each case, did we know its condition, would require a different answer. For the present we will confine our remarks to the most frequently occurring cases, in which old trees have become crowded with limbs through neglect. Here the most careless observer must see that light and air must be let

into the head, and that crowded and crossed branches must be removed. This never need have occurred had the tree been properly treated when young, but it is now in this condition, and the only help is surgery. Pruning is not only needed, but judicious pruning; the tree must be studied, to see what the effect will be of removing certain limbs. The head must not merely be made more open, but the tree at the same time left shapely and well-balanced. Again, trees, where there is much passing near them,

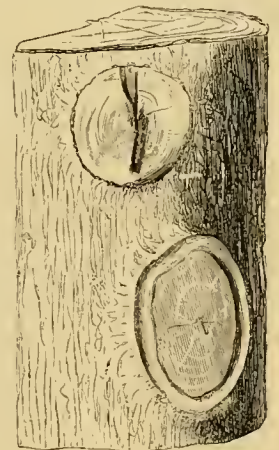


Fig. 2.—GOOD PRUNING.

often need to have their lower limbs removed. This is especially the case with shade trees; and it may be remarked, that all our deciduous trees are pruned in the same way, and mainly for the same reasons, as those of the orchard. The removal of certain limbs having been decided on, the next thing is to remove them. The time for pruning has been the subject of much controversy. The best time is after the trees have completed their season's growth; the worst time is when they are growing in spring. There are no serious objections to doing it late in the winter, provided it is done properly. The work with us is usually done with a saw; a rather narrow-bladed saw, with the teeth set rather wide, is best. When the limb is nearly severed



Fig. 3.

its weight will break it off, and tearing the bark make a bad wound. This must be guarded against by first cutting through the bark below, and by having the limb supported until the cutting is completed. It may be held up by means of a pitchfork in the hands of an assistant, or in any other way that suggests itself. It is to be borne in mind that every wound made upon a tree, unless it heals over properly, sooner or later leads to decay; hence too much care cannot be taken to avoid accidents like those referred to, as well as to put the wound in such a condition that the exposed wood will remain sound until covered by a new growth of bark. The rough surface left by the saw will hold moisture and prepare the way for decay, and it should be neatly smoothed by the use of a drawing-knife. The use of the saw is considered so objectionable in continental Europe that it is discarded altogether. The pruning there is done with a *serpette*, which is a heavy knife, much like a butcher's cleaver; the clean surface left by this in the hands of an expert operator needs very little trimming. The cutting is begun first below the limb, and then continued above, as shown in figure 3. A chisel, about three inches broad, and heavy in proportion, is also used in France, and by some good operators in this country. Stout handles of various length are provided for the chisel, and by driving it up from below with a mallet, limbs of considerable size are easily and neatly removed. In whatever way the limb is taken off, the wound should be covered, to protect the wood from the weather. Melted grafting wax is a good application, and may be put on with a brush. In France coal tar is used, but with this we have had no experience. It is important to cut so as to leave the smallest possible wound. When the branch is at nearly right angles with the trunk, cut straight across, and as near to the trunk as possible. If the branch is an ascending one, making an acute angle with the trunk, a cut close to the trunk would leave a large, oval wound; in this case the cut is to be a little oblique. We frequently see stubs six inches or more in length, which never should be the case. The wood of these projections after a few years decays, and the decay is communicated to the tree. Figure 1 shows the steps in this disaster. A stub is shown in the upper part of the figure; in the centre, an attempt of nature to repair the damage, and in the lower part, the too common result. A wound properly made and covered, heals in a few years, with the wood beneath it perfectly

sound. At the end of the first year a ring of new wood and bark is formed, as seen in the lower part of figure 2. This ring increases, year after year, gradually closing over the wound, until it appears as shown in the upper part of the same figure, and leaves the wood sound.

How Lilies are Propagated.

The Japanese Lilies are so hardy, as well as beautiful, that they should become as common as the Turk's Cap and Tiger Lilies. They are now all moderately cheap, and if one only has a bulb or two to start with, the stock may be readily increased. If left to themselves, the bulbs become large clumps by natural subdivision, but this is a slow way of multiplying them. If a lily be taken up in autumn, after the leaves have withered, there will be found upon the stem, just above the old bulb, a mass of small bulbs intermingled with roots. The engraving (fig. 1) shows one of our bulbs of the Golden-banded Lily (*L. auratum*) as it appeared when taken up last fall. The small bulbs are not as numerous here as they often are on stronger plants. A dozen, and even more, are frequently found. The little bulbs may be removed and planted out separately, or the stem to which they are attached may be cut off just above the old bulb, and set out with the cluster of bulbs and roots attached. They should be covered the first winter with a few inches of litter. The next season they will make strong bulbs. Another method of propagation is from the scales, of which the lily bulb is mostly made up, as seen in figure 1. These scales are attached to a solid portion at the base of the bulb, and they are broken off close to this, it being important to get the very base of the scale. The

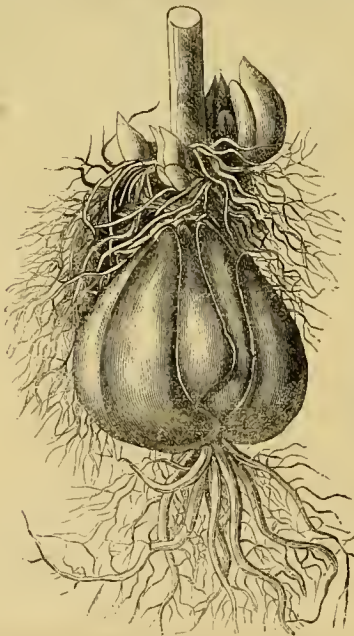


Fig. 1.

outer scales of a bulb may be removed without injury to it; indeed the majority of those offered for sale by florists have first been deprived of their outer scales, which makes the bulb look better and at the same time gives them material for propagating. The scales are set out in an upright position in boxes of sandy compost, pressing them down into it until the point is about level with the surface. The boxes are to be placed in a room where they will be at about the temperature of 50° or 60°, and kept just moist enough to prevent shriveling. In about two months a small bulb—sometimes two—will

be found at the base of each scale, as in figure 2. In spring the boxes are plunged in the open ground, and the bulbs allowed to grow all summer; in the following fall cover them with litter, and the next spring, if too thick, they are to be planted out separately. This manner of treatment of the scales is that given by Mr. Henderson in his *Practical Floriculture*. Another plan is to mix the scales with moss, (*Sphagnum*), such as is used for packing plants, and place them in a box in a warm room. They should not be so dry as to shrivel nor so moist as to be in danger of rotting. Tilton's *Journal of Horticulture* for January says, in speaking of *Lilium auratum*, "Thanks are due to our noble line of steamers plying between San Francisco and Japan, that this magnificent floral production can now be had at prices low enough to place it within the reach of all." That will do very well for Boston, but thanks to the noble line of ferry-boats plying between New York and Long Island and New Jersey, our wide-awake cultivators do not leave us to depend upon far-off Japan, with its shriveled bulbs. Thousands of the most perfect bulbs are grown around New York by the processes given above, and we commend them to the attention of our cotemporary.



Fig. 2.

Apple and Pear Seeds.

The seeds of the apple and pear will seldom germinate satisfactorily if sown when dry. They may be mixed with two or three times their bulk of sand and allowed to absorb moisture gradually. They should be placed in a box where they can be shoveled over to prevent heating. Mr. L. Kauffmann, of Johnson Co., Iowa, prepares his seed by freezing. In February, he just covers the seed with water, which, at the end of 24 or 36 hours, will all be absorbed; twice the bulk of sand is added, and the mixture of sand and seed placed where it will freeze, the boxes containing it being covered with boards, to keep out rain. The seeds should be sown as early as possible in the spring.

The Flower Trade.

Very few people are aware of the extent of the trade in flowers, especially in New York. A number of stores at a high rent are occupied by those whose whole business is the sale of flowers in bouquets, baskets, and other forms. A gentleman who is largely engaged in the trade himself recently informed us that he had no doubt that, during the holiday week, \$200,000 were expended for flowers in New York City alone; one florist's sales were \$10,000. To supply this demand requires many glass structures, which, in some cases, are extensive ranges devoted to the purpose, growing a large number of kinds; but mainly the flowers come from small establishments, where but few varieties are grown. In one of the suburbs of New York, the production of flowers forms a large item in the industry of the place. Camellias are most in demand, and the flowers sell from 15c. to 50 cents each, according to the season. In the week preceding the last New Year's Day, there was a great scarcity of these flowers, and parties came from Albany and other places in the

vain search for them in New York. Rose-buds sell at 4c. to 8c.; Tuberoses, at 5c. to 8c. the single flower; Double White Primroses, 50c. per hundred flowers; Heliotropes and Bouvardias, about \$1.50 per hundred trusses; Carnations, 2c. to 4c. each. Aside from the flowers, large quantities of bouquet green (*Lycopodium dendroideum*) and other greens are used. We have named above only the principal flowers used in bouquets. In making up baskets and ornamental designs, other flowers are worked in.

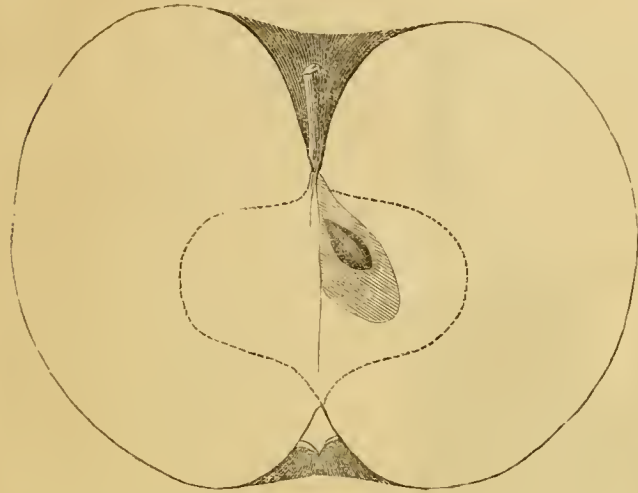


Fig. 1.—LAWVER.

New Western Apples.

BY JOHN A. WARDER.

[After Doct. Warder's Report on New Apples for the Horticultural Annual was in type, he sent drawings and descriptions of some fruits that had been lately brought to his notice, two of which are given here. The Lawver is briefly described in the Annual; we give here a figure and a more extended account of it.—Ed.]

LAWVER.—This beautiful fruit was raised by Mr. George S. Park, of Parkville, Mo., who named it in honor of Mr. A. M. Lawver, who has devoted many years to the development of pomology. Mr. L. has planted near South Pass, Illinois, probably the largest experimental

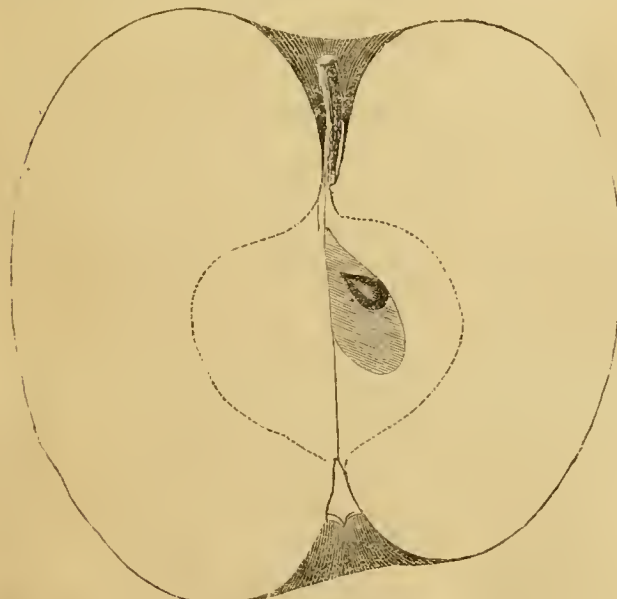


Fig. 2.—ZIMMERMAN.

orchard in the country, embracing some thousand varieties. The apple is a very handsome tribute, since it is considered "to excel all

others in color, size, and quality." It has been supposed that the Lawver would become for the West what the Baldwin is in the East—the favorite winter sort of apple, for all purposes.

Fruit, large, very handsome, regular, oblate; surface, smooth, deep red; dots, numerous, fawn-colored. Basin, medium, regular, or slightly ribbed; eye, small, closed. Cavity, acute, regular, brown; stem, short. Core, wide, regular, closed, not meeting the eye; seeds, plump, dark brown; flesh, yellow, breaking, fine-grained, juicy; flavor, acid, aromatic; use, table, market, and kitchen; quality, best; season, December and all winter. It is an early and constant bearer and escapes injury by the spring frosts.

ZIMMERMAN.—This beautiful fruit has been sent by Mr. Lawver, who received it from Western Missouri. It is not recognized as any known variety, and is therefore described.

Fruit, large and beautiful, oblong, truncated, regular; surface, smooth, light red on yellow, splashed bright red; dots, numerous, gray and fawn-colored. Basin, deep, regular; eye, small but long, closed. Cavity, deep, acute, clean; stem, medium, brown. Core, medium, closed, clasping; seeds, few, short, plump, wide. The flesh

is of a light yellowish color, breaking, and fine-grained; the flavor is subacid, mild, rich, but not highly flavored; use, table and market; quality, good to very good; season, December.

More About Quinces.

In December last we alluded to the scarcity of quinces, and mentioned that Angers Quince stocks upon which pear buds had failed had been used to fill orders. We did not do this with the intention of speaking against the Angers, but to illustrate the scarcity of those sorts usually grown for their fruit. We know of some who regard the fruit of the Angers as highly as they do that of any other variety.

Mr. J. L. Galloway, Milford, Ohio, writes as follows: "Until within the last year quince trees could not be sold in large quantities at any price. To illustrate. A tree planter called the other day for 200 trees; I asked him \$20 per 100, when he exclaimed, 'Why, quince trees must have raised. Four years ago, I bought them at \$5 per 100.' Now, the fact is, the present call for this stock is one of those spasmodic cases so common to our trade. "You also speak of filling orders with Angers in rather a disparaging connection. Now, it is a fact, that here in Southern Ohio the Angers, Fontenay, and Portugal, are all becoming quite popular, and we often have orders for all of them. On my sandy and gravelly soil, I find the Fontenay better than all other varieties, both for fruit and stocks, for dwarfing the pear. Its fruit is now (Dec. 8th.) keeping in my cellar as perfectly as it was the day it was taken from the

tree. This variety this season was fully as large and much more handsome with me than the Orange variety; and trees 6 years old had more fruit upon them than trees of the Orange variety 13 years planted had. The fruit of the Fontenay quince is much firmer and heavier than other kinds, cooks quicker, and is less astringent. I have long been advising those who plant the Peach for profit, to substitute the Quince."

Cold Frames.

Cold frames in gardens, if they have been carefully attended to during the early part of the season, and the cabbage and other plants in them properly hardened off, may now be more exposed than heretofore. By this time the plants should be so tough that hardly any amount of freezing will injure them. The most that is necessary is to prevent their being covered with snow. On this account, and chiefly on this account, it is not safe to leave the sashes up or off, even during the mildest nights, lest a sudden change of weather should do damage; but during all sunny days, no matter how cold, unless the wind is blowing violently, it will be of advantage to the plants to strip the sashes off entirely. Even yet, and until the first of March, they should be kept covered in the morning, until after the frost is thawed off from the under side of the glass.

Plants which have been treated as we direct may be set out in place in the field as early in March as it is possible to prepare the ground for them; and although, as during last spring, the whole of April and a part of May may be so cold and so wet that they will not grow at all, they will be in no way injured, and so much of the heavy work of the spring will be done and out of the way. To use the sashes with the greatest economy, there should be another set of frames ready to receive them as soon as they are removed from over the cabbages. The earth in these frames should have been prepared the autumn before, and well covered with litter, to prevent hard freezing. Lettuce plants taken from the cold frames may be rapidly forwarded in these as soon as the sashes can be used to cover them; and after the lettuce is out, they may be used for the early crop of cucumbers.

The Barberry for Hedges.

Some two years ago we published about all that was known regarding the use of the Barberry for hedges. Our correspondence shows a continued interest in the matter, and we will briefly answer the queries proposed. The Barberry makes a beautiful hedge, grows quite rapidly, is not disposed to sucker far away from the stems, and bears the shears well, though it requires but little cutting. Whether it would be proof against breachy cattle, we are not yet satisfied. We have seen no hedge of it equally "bull proof" with the Osage Orange or Honey Locust. This is a point on which we would like reports. The plant is best raised from seed; it will grow from cuttings or layers, but not so readily as other plants. Seeds are now sold by our large dealers. It would be better to procure the seeds in the fall, and keep them mixed with sand during winter. Those that have been dried are slow in germinating. We never had occasion to sow the seed but once, and then it was mixed with damp sand and exposed to the weather. The plants came up in great abundance. The young seedlings should be carefully thinned, weeded, and watered.

Evergreens in Pots.

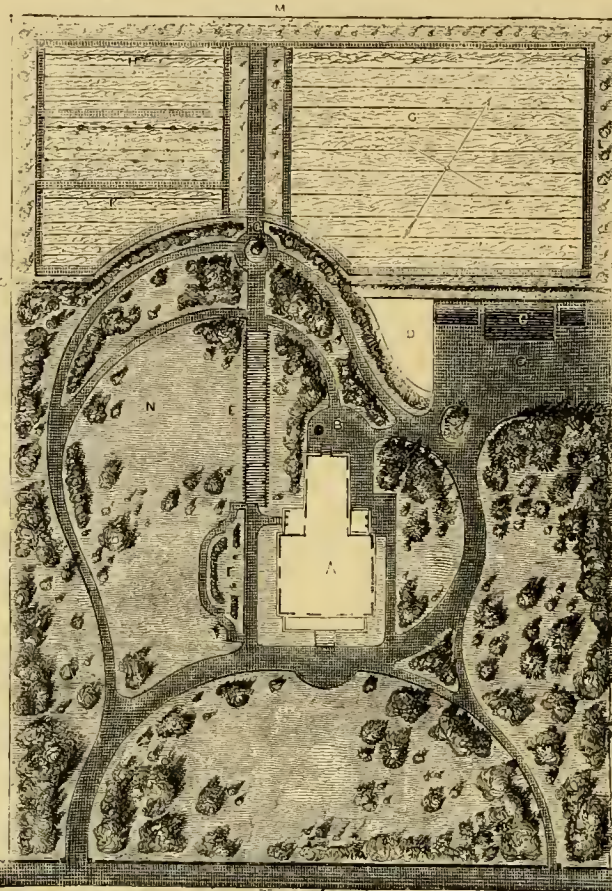
BY JOSIAH HOOPES—AUTHOR OF BOOK OF EVERGREENS.

For many years past, the pot-culture of Evergreens has been a feature in the nurseries and arboretums of Europe, while Americans have nearly overlooked this practice, with all its consequent advantages and profits. The main advantages to be derived from growing Evergreens in pots are—their early removal, comparative safety during transportation, the ease in handling, successful transplanting, promotion of fibrous roots, etc. The rarer species only are grown in pots, as the common and cheaper kinds will not remunerate for the extra expense. The seedlings or cuttings should be early potted off, to induce an abundance of fibrous roots at the commencement, as well as for the purpose of hardening the stem, and making the plant stocky. A proper compost is two parts of good turfy loam, one of muck or well-rotted leaf mould, and one of coarse, sharp sand; to which may be added a small proportion of old hot-bed manure, thoroughly decomposed. Never, under any circumstances, use fresh manure, sand from a bank, nor muck or leaf mould that has not been exposed to the action of frost. A sandy mould is preferable to a clayey one. The young plants should never be shifted into larger pots, unless the roots become very plentiful on the surface of the ball of earth. We have known instances where valuable plants were killed by using too large pots, and thus causing the young rootlets to rot. Evergreens never require a great abundance of water, but they should never suffer from its being withheld too long. A thorough drainage should always be used. Rough pebbles, broken pots, charcoal, etc., are excellent, with a slight covering of moss. During the summer, the pots should be sunk in the ground up to their rims, and they will consequently need but little attention, except an occasional watering and weeding—little, if any more in fact, than when growing in the soil of the border. We have seen in some places very pretty effects produced with these young Evergreens in pots, by placing them in certain positions, to form neat-looking beds of various shapes—the taller ones in the centre, gradually sloping down to the little specimens in the outer circles. Our nurserymen in the Northern States are often desirous of growing some of the half-hardy species, but are deterred by the losses sustained during winter. Pot-culture offers a remedy. The plants may be taken up in the autumn and sunk in cold-frames. They are then easily protected by a good thick covering of rough manure around the sides of the frame, whilst the top should have tight shutters, to cover it securely. A cool, dry cellar is an excellent place in which to winter young Conifers in pots, and will pay for itself in a short time. Whoever has visited the beautiful collections at Wodenethe on the Hudson, or Wellesley near Boston, must have been pleased with the oriental appearance produced by the large Araucarias, etc., grown in tubs. There is something indescribable in the novel effect of these tender strangers, intermingled with the well-known Spruces and Pines, so familiar to us all. To have these in perfection requires a large glass-house during winter, and consequently their

culture must, to a certain extent, be limited; but there are very many plants with evergreen leaves, that can be grown in large pots for several years, and which will prove very valuable for decorative purposes; as, for instance, *Pinus patula*, *P. longifolia*, *P. Canariensis*, *P. Devoniana*, *P. filifolia*, *P. Gordoniana*, several species of *Cupressus*, *Dacrydium*, *Frenela*, *Juniperus*, *Podocarpus*, &c., &c. As the plants become unmanageable, they should be supplanted by younger ones, which will last for several years. By sinking the pots their whole length

By simply locating steps on the left or right hand side of the piazza, the drive could be carried on the side of the house, leaving the front lawn entirely free for ornamenting, and thus avoiding a large graveled space where a lawn would appear much better, and be less trouble.

To economize space, instead of establishing a turn on the right of the house, the drive is carried up to the stable yard at C, which is made a few feet larger than usual, to allow vehicles to turn and drive back to the front steps. This arrangement greatly simplifies the



PUBLIC STREET
0 10 20 30 40 50 60 70 80 90 100 110 120
PLAN FOR LAYING OUT A SMALL PLACE.

in the ground, the tender occupants have the appearance of growing in the position where they are placed, although the larger plants in tubs are attractive when simply set on the grass in suitable positions, either singly or in groups.

Plan for Laying Out a Small Place.

BY EUGENE A. BAUMANN, RAHWAY, N. J.

[The following plan, by one of our most eminent landscape gardeners, will meet the wants of many owners of town or village lots.—Ed.]

This plan shows a town or suburban lot about 350 by 400 feet, having about one-half the area in walks, yard, and vegetable garden.

The laying out is in the simple style generally preferred for such places; the vegetable garden is in the rear, and being near the stable yard, manure is readily carried to the ground.

The carriage approach, 12 feet wide, strikes the dwelling A, just in front. This is an arrangement to which I am generally opposed, preferring to have the main front free, and the entrance somewhere on the side; but as in most small suburban houses, in consequence of the interior arrangements, the main entrance is the front, the drive is made to conform to it.

whole, but I am afraid that many persons will object to turning in front of the coach house, though that place can be kept as clean as any other. At D, in a triangle left between the stable yard and one of the walks, there will be room for a drying ground. At B, in the rear yard, there is the well, near the kitchen door; at E, a grape arbor, subdividing the rear of the house and the yard from the pleasure ground, leading in a straight line to the central walk in the vegetable garden. At F, is suggested a small flower garden on the sunny side of the building; more flower beds could be made on the soddings surrounding the dwelling, near the grape arbor, or in single groups on the lawn, but the smallness of the scale hardly allows them to be represented. The vegetable garden at the rear is divided into two main parts; one, G, for the ordinary annual crops on the right; the one on the left is in the three divisions, H, I, K, for Asparagus, Strawberry, and Rhubarb beds, or perhaps for Gooseberries, Blackberries, and Raspberries. Borders of eight feet in width, all along the fences, are intended for standard and dwarf fruit trees, placed alternately, while the two borders along the central path are for small fruits. The upper border, at M, most exposed to the sun, may best answer for a trellis of Grape vines, with Currants and Gooseberries in front. At O, O, O, a hedge is indicated, dividing the vegetable garden from the pleasure ground. This hedge ought to be of some kind which answers well in a shady place, as the belt of shrubbery suggested between the pleasure ground and the hedge will partly shade it. The Barberry will be the best.

The part of the lawn N is mainly surrounded by deciduous shade trees, like the Sycamore, Norway Maple, and American Linden, and could be advantageously used either as a croquet ground, or a play-ground for children.

The trees in the rear of the house, as well as those in front of the stable yard and north of the grape arbor, are mostly Evergreens.

Other evergreen trees, principally Hemlocks and White Pines, and some Junipers, may be employed to advantage right and left of the two gates, but mixed with deciduous kinds.

The balance of the plants, especially along the south-west fence, is to be mostly of deciduous trees and shrubs, with single evergreen trees of various sizes and sorts in front of them. Groups of flowering shrubs, such as Weigelia, Spiraea, Deutzias, and Hydrangeas, ought to be detached from the densely crowded belts, to show better.

PLANTS IN THE CELLAR need air on mild days. They are more apt to suffer from dampness than from dryness, yet they should be looked to occasionally, and not be allowed to become what Mr. Henderson calls "killing dry."

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

The Table—Order and Ornament.

Some remarks under the above head have called out a request that we should be more explicit and tell those who have a desire to appear at the best their circumstances will allow, something more on the

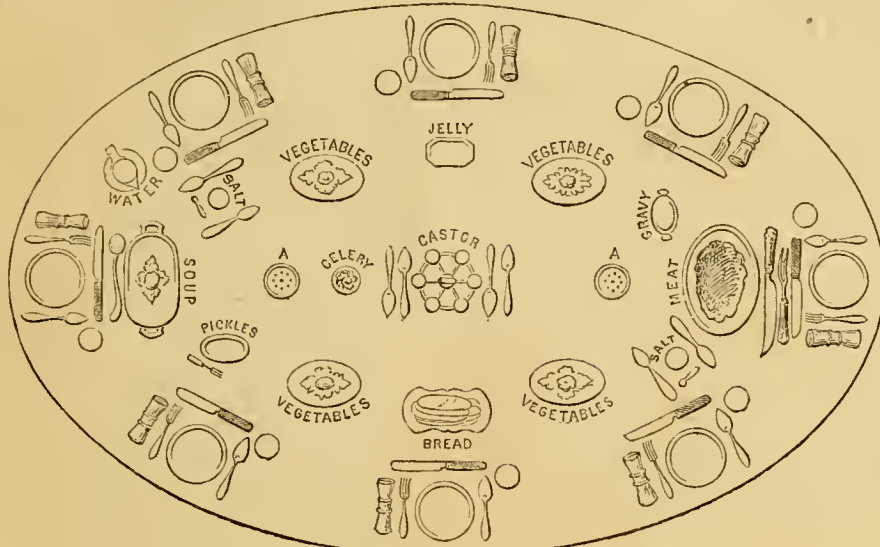


DIAGRAM FOR SETTING A TABLE.

subject. We designedly put "order" before "ornament," as being more desirable and more readily attained. In no one thing in the household is order more desirable than in the arrangements of the table, and we propose to say a word about setting a table. Many will think this too simple a matter to write about, but it must be recollected that there are hundreds living in isolated places who desire to know how such simple things as this are done elsewhere, and who wish to conform to the best usages. Who would not rather partake of a simple meal at a well-ordered table than an elaborate dinner at a slovenly one? There are two things necessary to the proper enjoyment of a meal, whatever or wherever it may be: these are order and scrupulous neatness. The writer once had a "help" who had been for a long time on a steamboat. She was a good cook, but oh! what a mess she made of the table! The plates and knives and forks were chucked on, steamboat fashion, and the castor, salt-cellars, and other articles, never in the same place twice in succession. But we did not start with the intention of telling how not to do it. In the great majority of families no domestics are kept, and all the table arrangements, where this is the case, should be with a view to avoid, as far as possible, the necessity of any one's rising to get a missing article, or for the change of plates. A diagram is here given of a table set for a family of eight; the oval form of a table is the pleasantest, as there are no corners, but the same order may be observed in a square one. Each plate has knife, fork, spoon, napkin, and glass for water. The meat is placed before the "man of the house," with carving knife and fork; also the steel, which we forgot to put in the diagram. Soup is served by the lady. We are well aware that soup is not frequently served at farmers' tables, but that is no reason it should not be, and we put it in the diagram as a reminder that a cheap and nutritious food is much neglected. The castor occupies the center; butter, when used at dinner, stands at A, A. Four dishes of vegetables are indicated, which are more than are generally used. Where there are fewer, let them be placed near the older members of the family. A spoon should be put upon the table for each dish to be served, with one or two to spare. Salt, if in large salt-cellars, needs salt spoons. Small salt-cellars, one to each plate, are much in use; with these no spoons are needed. Where there is no help, the dessert should be arranged on a side table, close at hand, and there should also be

a place for dishes to be removed. When plates are to be changed it should be the business of some particular member of the family to do it quietly. The table should be set as nearly as possible in the same way, so that those who sit at it will always know where to look for whatever they may require. In the way of neatness, clean table-linen is of the first importance. If an accidental spot is made upon the cloth before it is generally soiled enough to change, lay a napkin over it. Have

the glasses carefully wiped, the knives perfectly clean, and the silver bright. A table thus arranged will always look cheerful and homelike. We leave the family seated at it, and postpone the serving of the eatables thereon until another time.

Household Talks.

BY AUNT HATTIE.

TRIMMING LAMPS.—Some always use a pair of shears to trim their lamp wicks. I never do. A better way, and one which I invariably practice, is to pinch or wipe off the black crust with a piece of paper; you may keep a cloth for the purpose, if you wish.

You will find that the flame will be perfect in shape, and exactly in the center of the lamp chimney, and also that the wick will last twice or three times as long,—quite a desideratum in the country, where I have known it to be necessary to harness the horse and drive to town for lamp wicks.

CUTTING UP AND SALTING PORK.—Farmer Johnson brought me my two-hundred-pounder the week before Christmas. I was anxious that he should kill two or three weeks before that time, but he insisted upon it that the hogs were not fat enough, and as I knew that he must be better acquainted with his own business than I could possibly be, I allowed myself to be persuaded. I have long since ceased to depend upon Edward for assistance in culinary matters, and I have been the more willing to excuse him, because of his promptness in providing funds wherewith to procure other and better help.

Farmer Johnson also has become fully acquainted with this deficiency, and annually brings his butcher knife with the hog. I quite enjoy the cutting up process, both because I have the satisfaction of knowing that it will be done exactly as I wish, and because I enjoy an hour's social intercourse with a genial, practical, and intelligent farmer.

"Now, Mr. Johnson, I want you to cut the hams as large as possible; cut right into the side as far up as my finger." "Why! marm, that'll leave full three inches of fat on the lean, and will make the fitch mighty small."

"I do not care for that; whatever fat you leave upon the ham will be ham, and if you leave it on the side it will be bacon. The one is worth 25 cents a pound, and the other only 15 cents."

"You don't calculate to sell your hams?" "Oh no! that is not my idea at all, but a slice of fat ham

for breakfast will taste better than a slice of fat pork; besides, the lean of the ham will be far juicier, sweeter, and better, and the fly will be better resisted, if it should be exposed. The jagged side ends will do for lard, or will make a small roast."

The head is divided, and the cheeks or jowls cut off in good shape. They will, of course, be cured with the rest of the pork, and will, after being boiled and skinned, make excellent side dishes with roast or boiled chicken or veal.

Mr. Johnson is an Englishman, and cures his pork in the English way. As it has been always more convenient for me, and as I like it too, I have followed his directions, which are as follows:

Lay the sides upon a board suitable for the purpose, which should be raised from the ground. Rub in on both sides a quantity of salt and a little pounded saltpeter: after rubbing, allow about half an inch depth of salt on the side; place the other side over the first and salt in the same way, then the shoulders or hams, heaping over these as much salt as you can; then the cheeks or jowls. Allow more saltpeter to the hams and shoulders than to the rest. The color of the lean will be much improved, and I think the flavor will be better. The cellar should be occasionally visited and the pork examined, and any exposed places rubbed with a little more salt. In five or six weeks I take them from the salt, of which there will be but little left, wipe dry, fold in newspapers and cloth bags, and hang in a dry, warm room until they are ready to store in the attic. If the sides are too large to handle conveniently, they may be cut into any size required. I am very well aware that this method is entirely contrary to the practice of most American housekeepers, yet I am convinced that should they become used to the plan they would be willing to acknowledge that they like it far better. Of course the hams may be smoked, if that distinctive flavor is preferred.

KEEPING EGGS.—The eggs are coming in quite plentifully now, and I prepare them for keeping any length of time, fresh and good, as follows: Place ten or a dozen in a small basket and immerse them in boiling water, taking out almost instantly. I then pack them, small end down, in dry salt or sawdust, as convenient. If they were rubbed over with a little warm lard it might be an advantage. To dip them in boiling lard would not do, as fat boils at a much higher temperature, and the shells would immediately crack. The principle of this method is obvious. The entire portion of the surface of the white of the egg immediately under the skin-like membrane which exists in every egg is congealed, thus forming an impervious coating, which prevents the evaporation of the contents and consequently the admission of the atmosphere.

ROASTING PORK.—The roast pork we had for dinner was excellent, served as it was to-day. I call it mock goose. A small incision was made in the meat and stuffed with a little chopped onion, seasoned with sage, pepper, and salt. Pork should always be thoroughly cooked. The fat should be removed from the brown gravy, a little water added, but no flour, boiled, and sent to table in a gravy dish. Apple sauce made in a crock in the oven, onion sauce, and fresh boiled potatoes, are the necessary accompaniments.

VEGETABLES.—I never serve carrots, cabbage, or turnips, with cold meats. They are always acceptable and wholesome when brought to the table with hot roast beef, or a leg of mutton, and some like them with chicken; mashed turnip, of course, is excellent with a freshly roasted turkey. Turnips should be well pressed before they are mashed. Carrots are much nicer chopped almost fine, say as large as dice. A trifle of butter, mind only a trifle, stirred in, will improve their appearance and flavor.

TO ROAST A GOOSE.—Procure a young and tender one, if possible. The giblets, which consist of the middle joint of the wings, the neck, with the heart, liver, and gizzard, should be separated, seasoned with salt and pepper, and stewed until tender; when done they should be taken from the water, which should be reserved to add to the brown gravy from the goose when roasted. Remove all the loose fat from the inside of the goose, and stuff

It with a mixture of chopped onions and sage, seasoned with pepper and salt. Two good-sized onions, a tablespoonful of powdered sage, a teaspoonful of salt, and a half-teaspoonful of pepper, is about the proportion. The openings in the skin should be stitched together firmly, so that no grease may enter. Allow no water in the pan, and baste often with the fat from the pan. When the goose is of a fine brown, especially around the wings and legs, it having been in the oven over an hour, you may, I think, if the goose is young, depend upon its being done. The fat should all be poured from the pan, keeping back the brown part, which is the gravy. Set the pan on top of the fire and add the water in which the giblets were cooked, and pepper and salt, in sufficient quantity; boil up and serve in a gravy dish. Hot apple sauce and onion sauce should be served with goose. The onion sauce is made as follows: Boil a dozen onions until tender, chop fine, make a sauce of milk well thickened with flour, and a little butter and salt. When boiling, add the chopped onions, and send to the table hot. The grease from goose should never be sent to table at all. Ducks are excellent roasted and served like any goose. If green peas can be had, all the better; "duck and green peas" are familiar to all epicures.

BRAWN, or HEAD CHEESE.—After the pig's head has been cleaned, soak in water. I use warm water, for twenty-four hours, changing it occasionally. If properly done the rinds will be as white as paper, and will look very nice and delicate. All hairs which resist the knife should be singed with burning paper.

Rub into the pork a little powdered saltpeter, then plenty of salt, and let it stand for two weeks. Take from the salt and soak for half a day, boil tender, remove all the bones, chop pretty fine, place in basins or molds, cover and press. When cold it is ready to serve. Some season with pepper, some add sage; I make mine without either, and eat with mustard and vinegar. The thinner the slices can be cut, the nicer they will be to eat.

Tin-ware to Mend.

One of the street cries of large cities is that of the traveling tinkers, who cry out, "Tin-ware to Mend." From the number of letters asking us to give directions for soldering, one would suppose that a share of our readers had an idea of turning tinkers—and for that matter, why shouldn't they? Tin-ware will wear out, and it is very convenient to be enough of a tinker to be able to stop a leak upon an emergency. The ability to do ordinary soldering is easily acquired by a little practice, though in this, as in other mechanical operations, some will be more apt than others. Those who are disposed to undertake it will learn more from watching a good workman for a few minutes than they can from any instructions, however minutely written. We can only set forth the chief points to be observed. Domestic soldering operations are mainly confined to articles of tin-ware, with occasionally one of copper. Soldering is a sort of pasting together of two pieces of metal by the use of another metal, called solder, that melts at a comparatively low temperature. The solder must readily unite with, or adhere to, the metal to be soldered. That it may the more readily do this, a flux, usually of rosin, is used to protect the surfaces from the action of the air, and secure a more perfect union. Common tin-ware—and some of it is very common—is not made, as is often supposed, of pure tin, but of thin plates of iron, the surfaces of which are merely coated with tin. This is called tin-plate, while vessels made of pure tin, which they very rarely are, are called block-tin. The Britannia ware, white metal, and pewter, of which teapots, etc., are often made, are alloys of lead, tin, copper, and other metals. Ordinary tin-ware is soldered with comparative ease; Britannia, pewter, and the like, require skillful management, as they melt at nearly the same temperature as the solder. Copper is soldered quite readily by the aid of a zinc solution, to be mentioned below. The materials required are a soldering iron, solder, rosin, zinc solution, and a scraper. The soldering iron, so-called, is really a

soldering copper; its shape is shown in the engraving. It may be purchased ready-made, or it may be made by a blacksmith. The copper portion is a cylinder with a four-sided point; it is about an inch and a half in diameter, and weighs about a pound and a quarter. It is fastened to an iron shank, which may be screwed in, or attached by rivets, and this shank fits into a wooden handle. The pointed portion is to be "tinned," as the workmen say, which means that it is to be coated with solder. To tin the point, file it smooth, heat the tool hot enough to melt solder, then quickly file the surface bright, and rub it on a small lump of solder that has been placed on a board for the purpose, using rosin, or a few drops of the zinc solution. If not successful in coating the end with solder at the first attempt, try again. The point being once well covered it will keep so unless the tool is heated so hot as to burn it off. Solder may be had at the hardware stores, or tin shops. Get what is called



SOLDERING IRON.

fine solder, which is better than that used for coarse work. Solder is an alloy of lead and tin. Common rosin, coarsely powdered, should be kept in a little box. The zinc solution is made by putting some muriatic acid, say two ounces, in a wide-mouthed bottle, with twice as much water; add to this some strips of sheet zinc, and when the acid has dissolved all the zinc it will, which will be known by the stopping of the effervescence, it is ready for use. This is best done in the open air, as the gas given off during the operation smells unpleasantly. A scraper is made by grinding down an old file to a smooth edge. The soldering iron is best heated in charcoal, or the coals of a wood fire; if a hard-coal fire is used, more care is required. The copper should never get red-hot, as in that case the coating of the point will be burned off, and it must be re-tinned. Scrape the surface of the portion to be soldered, clean and bright, and sprinkle on a little rosin. When the iron is at the proper heat, wipe its point on a wet cloth and apply it to the end of a bar of solder; a small portion of the solder will be melted and stick to it like a drop. Draw the point of the iron along the place where the solder is needed, recollecting that the metal to be soldered must be heated by the contact before the solder will unite with it and flow. It is well to practice first on some bits of tin, as an unskilled hand may heat the utensil too much, and thus unsolder parts already joined. If any of the iron surface of the tin-ware is exposed, a drop or two of zinc solution must be applied by means of a stick, the surface being previously well scraped. Small holes are most readily stopped by placing a bit of solder on them, and then melting this by means of the iron, so that it forms an adhering drop.

Dissolving—Solution.

The directions to dissolve this or that, and the term solution, are often used not only with indefiniteness, but with great inaccuracy. When we are told to "dissolve starch in cold water" and to "take a solution of lime as thick as cream," we are directed to do that which is impossible. Starch is completely insoluble in cold water, and water mixed with lime to the thickness of cream is no solution at all. For a substance to be in solution in water or other liquid it must be so intimately combined with it that the liquid shall be perfectly transparent, and no separation or deposit shall take place except with a change of temperature. Starch stirred with water will all finally settle when left at rest. Lime stirred with water, in sufficient quantity to make it milky, will nearly all settle, but a very little will be held in solution; all that a pint of water can dissolve is about eight grains. When a liquid has taken up all of a solid it can dissolve at a given temperature it is said to be saturated. We say at a given temperature, because most soluble solids are dissolved more readily by hot liquids than by cold. A notable exception to this is one

that we often have occasion to dissolve—common salt. Boiling water dissolves but a very little more salt than cold water, while in the case of sugar, the amount dissolved is enormously increased as the water is heated. When a substance is very soluble at a high temperature, and less so at a lower one, a portion of the substance is deposited as the liquid cools. A pint of boiling water will dissolve over a pound of alum, but when the solution cools, more than nine-tenths of the alum will appear again in the solid form. To make a solution as rapidly as possible, the solid should be finely divided or powdered, and the liquid should be stirred until solution is complete. If we throw a peck of salt into a barrel of water and allow it to remain there, the lower portion of the water will become saturated long before all the salt is dissolved, and the water above will contain comparatively little. If, on the contrary, the same amount of salt be tied in a cloth and hung at the top of a barrel of water, it will dissolve rapidly; as soon as a portion of water is impregnated with salt, it becomes heavier and sinks, and a circulation is kept up until the whole is dissolved. Here we see the philosophy of the practice of the good housekeeper, who always keeps some undissolved salt upon the top of her meat; as long as this remains undissolved, she knows that her brine is thoroughly saturated—i. e., it contains all the salt that can be usefully put into it.

How to Make Good Bread.

Prof. Horsford recently gave a public lecture in New York upon "The Philosophy of the Oven," in which the whole history of bread-making was discussed. We extract from the report of the lecture the following directions for making bread: "Select good, plump, fully ripened, hard-grained wheat. Have it freshly ground and not too finely bolted. Prepare the yeast as follows: Boil thoroughly with the skins on, in one quart of water, enough potatoes to make a quart of mashed potatoes. Peel the boiled potatoes and mash them to fineness; mix intimately with them one pint of flour, and stir the whole to an emulsion with the water in which the potatoes were boiled. Cool the product to about 80° (lukewarmness), and add half a pint of the best fresh baker's yeast, and a tablespoonful of brown sugar. Set aside the mixture at an even temperature of about 80°, till it works well, or is in active fermentation. Of this yeast take half a pint to a gallon (7 lb.) of flour, mixed with three pints of water, or two of water and one of milk, all at the temperature of about 80°; add a little salt, knead thoroughly, and set aside to rise at the temperature mentioned. When it has risen to nearly the full volume for the dough, divide it into loaves, knead again, set it aside at the temperature already named until it attains the full size of the loaf, and place it in an oven heated to not less than 450°. Let the loaves of dough be smaller than the tins. Keep them covered with flat tin plates or stiff paper until the dough is fully raised and the heat carried up to, and sometimes maintained throughout the loaf at 212°, to convert all the starch to the mucilaginous or emulsion form and destroy the ferment. Then remove the cover, and permit the browning to take place. If the loaves are large, a higher temperature will be required. Seven pounds of flour will make eight loaves of 1½ lb. each when baked, or four of 2½ lbs. each. Such yeast, as is above described, will keep a week in winter and from two to four days in summer. Bread made with it, in faithful obedience to these instructions, will be good.

Potatoes should always be kept in the dark. Rural housekeepers do not need to be told this, but many others who live in towns and cities should know that potatoes exposed to the light, for a day only, have their flavor injured, and the longer exposed the worse they are. Never use a greenish potato.

Breakfast Indian Fried Cakes.—1 quart of meal, 2 eggs, 1 cup of sour milk, 1 teaspoonful of saleratus. Mix them with new milk hard enough to make them round with your hand.



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"ASKING THE BLESSING."—DRAWN BY F. BEARD.—Engraved for the American Agriculturist.

A clergyman recently related the following: Two young friends of his were boarding in Germany with a very devout Catholic lady, who always asked a blessing before each meal. One day she asked the young men how the Americans asked a blessing. One of them, remembering the haste with which so many of his countrymen attack their food, said, "The American blessing is, 'Pitch in.'" A few days after, the good lady, thinking to please her boarders, reverently folded her hands before breakfast and uttered the words, "Pitch in," which they, of course, did. But such a custom, we are happy to know, is far from being universal. Thousands lovingly remember the source from which all good things are sent, and never partake of food without first lifting up thoughts of thankfulness to the great Giver. The picture above shows such a scene. The settler on the far western frontier, who is about to take his noonday meal from the hands of his little daughter, pauses, and reverently lifting his hat, asks God's blessing, while she stands silent and thoughtful, learning a lesson for life. The man who is thus mindful of dependence upon the Father of all will be likely to live continually in His smile and be prospered.

Curious Philosophy.

The former sexton of the John St. Methodist Church in New York was an odd character. On one occasion he had taken a heavy cold, and was hoarsely croaking about, when a friend asked him how he was so unfortunate. "I know just how I got it," replied he. "I was shoveling snow, and my back was very cold. When I went into the house, I stood with my back to the fire for some time, and that gave me the cold. For, you see, I ought to have stood my face to the fire, then the cold would have been driven out; but instead of that it was driven right in through

me, and settled on my lungs." This was equaled by a member of the Board of Agriculture of a certain State. The plan of a new barn was under discussion, and there was a difference of opinion among the members, whether it should be boarded up tight, or left with openings between the siding. One of the members said that he was opposed to the open siding, because the cold coming in from all parts would drive the heat of the hay to the center, and it would therefore burn! One of our editors was present at the discussion and knows this to be a fact.

"All a Settin'."

An exchange gives the following: "Old Farmer Gruff was one morning tugging away with all his might and main at a barrel of apples, which he was endeavoring to get up the cellar stair, and calling at the top of his voice for one of his boys to lend a helping hand, but in vain. When he had, after an infinite amount of sweating, accomplished the task, and just when they were not needed, of course, the boys made their appearance. "Where have you been and what have you been about, I'd like to know; couldn't you hear me call?" inquired the farmer in an angry tone, addressing the eldest. "Out in the shop, settin' the saw," replied the youth. "And you, Dick?" "Out in the barn, settin' the hen." "And you, sir?" "Up in Granny's room, settin' the clock." "And you, young man?" "Up garret, settin' the trap." "And now, Master Fred, where were you settin'?" asked the old farmer of his youngest progeny, the asperity of his temper somewhat softened by this amusing catalogue of answers. "Come, let's hear." "On the doorstep, settin' still," replied the young hopeful, seriously. "A remarkable set, I must confess," added the amused sire, dispersing the grinning group with a wave of the hand.

Superstitions of Miners.

Miners in most countries are very superstitious, as might be expected from their general ignorance, and their gloomy occupation. This is especially true in England, where the miners will tell you of the "knoockers" whom they declare they often hear in the solid rock before them, boring, blasting, and getting out ore. They are not dreaded however, for the miners expect to find good workings when they can hear these mysterious noises. One singular feature in their operations is that they are only heard when the miners themselves are at work; the moment they stop to listen, the knoockers are silent also. From this circumstance, unbelievers conclude that echoes make all the mystery. In Staffordshire a story is current of a miner named Jack, who worked there many years ago. He would never descend the mine in the daytime, when others were at work, but always went down alone at night, and did more than three ordinary workmen could do in the same time. Finally a fellow workman resolved to find out Jack's secret, and quietly descended into the mine after Jack had been there for some time. To his astonishment he saw Jack seated at his ease smoking his pipe, while hundreds of little men were busy at work getting out coals for him. Alarmed at the curious sight, he immediately hastened out of the mine, but had only got fairly away from its opening, when a tremendous explosion was heard, and sulphurous smoke and a quantity of coals were blown out of the mouth of the pit with tremendous force. The next morning Jack was found dead at the bottom of the mine. The miners believe the pigmies were angry at the intrusion of a stranger, and revenged themselves on Jack. No trace of them was ever again seen. It is very easy to see how such a story could have been started from the singular habits of some unusually active workman.

"OUR YOUNG FOLKS."

AN ILLUSTRATED JUVENILE MAGAZINE.

This Magazine has won golden opinions from its many thousands of readers, who have awaited with eager interest each successive number since the first made its appearance, four years ago. Its Stories, Sketches of Travel and Adventure, Poems, and Articles on Historical, Biographical, or Scientific Subjects, have been furnished by the ablest and most popular writers in America and England; and its Illustrations have come from the most skillful artists in the country. The efforts made by the Conductors of "OUR YOUNG FOLKS" to produce for youthful readers a Magazine at once instructive and entertaining, by a wide variety of excellent reading from writers whose names are a passport to the affections of all boys and girls, and to the confidence of older and more cautious readers, have been successful in a remarkable degree. The Press has praised the Magazine in the highest terms as "the Best Juvenile Magazine ever produced in any Land or Language." The wisest Educators of the country have commended it as a most valuable auxiliary to the teacher and parent in the instruction of youth. The most distinguished Clergymen, of all denominations, have spoken of it as an excellent Magazine for the family, and some have commended it as eminently suited to add to the interest and practical benefit of Sunday-schools.

But the strongest and the best testimony to its attractiveness comes FROM THE READERS OF "OUR YOUNG FOLKS."

MADISON, December 2d, 1868.

I have taken "Our Young Folks" ever since the first number made its appearance, and I would sooner go without my dinner every day than lose a single number: it is meat, drink, and lodging for me.

FOND DU LAC, WIS., May 13th, 1868.

To the Editor of "Our Young Folks":

I am a member of a class in school which uses your Magazine for a reading book, and we have taken much pleasure in our reading exercise that we determined to write and tell you how much we enjoy it. You cannot think how tired we used to be of the political speeches and all sorts of dry reading in our old readers. We dragged along in them for the first two or three terms of our school, until our teacher asked us how we would like to have "Our Young Folks" to read in. We all thought we would like it very much, and I meant to have it; and now, after a term's trial, we are prepared to say that we are much pleased and really thank you. We look forward with real pleasure to the time of our reading class now, and we can hardly wait for the new numbers to reach us. Yours, gratefully, for the whole class,

COLDWATER, MICH., Oct. 12, 1868.

I wanted so many new books and tools this year, I thought I would try and get along without "Our Young Folks"; but I can't do it. I am lame, and cannot go off and play with the other boys; so I must have my old friend again.

FAIRBANKS, MINN., Sept. 21, 1868.

My little boy took your incomparable Magazine for two years. But this year I was not able to get it for him at the beginning of the year; at this late day I can get it. I think your Magazine the best that I have seen, and hope to send for it earlier another year.

BERMANN, MO., Nov. 29, 1868.

*** My brother has given me the first and second volumes of "Our Young Folks." I like these so well that I want to own them all, and have tried to earn money enough to pay for them. I have found it a hard job, as money is not as plenty as work; but I have succeeded now, and I mean to keep on taking "Our Young Folks" as long as it is published, which I hope will be for a long time.

PAINTED POST, N. Y., Nov. 24, 1868.

We find your excellent Magazine indispensable in our family.

TOLEDO, OHIO, Nov. 18, 1868.

DEAR SIR:—I wish to renew my subscription for "Our Young Folks" for 1869. My little brother is perfectly delighted with it, and his delight is shared by the whole family. *** Yours, most respectfully,

UTICA, N. Y., Dec. 7, 1868.

MESSRS. FIELDS, OSGOOD & Co.:

My little son has been a subscriber to your excellent Magazine ever since the first number was issued; and he would as soon think of going to bed without his supper as of being deprived of the pleasure the Magazine affords him. ***

BLOOMINGTON, ILL., Dec. 1, 1868.

*** We enjoy "Our Young Folks" so much we feel as though we could not get along nicely without it. Many a lonely and sick hour has been passed pleasantly by its help, and I think it improves all the time.

ALBANY, Dec. 23, 1868.

MESSRS. FIELDS & OSGOOD.—I send \$3, the price for five copies of "Our Young Folks" for 1869. I use your Magazine first rate and I have got four of my chums to take it with me this year. I think I shall like "The Story of a Bad Boy," because I think it is going to be the story of a *real* boy, and that is what I want. I suppose I am a sort of bad boy; somehow I can't help getting into mischief sometimes, but I don't mean to be a *very* bad boy. I hope we shall have more of William Henry's letters. I know a boy just like him. Commence with the January number. Yours truly,

The following extract from a letter of the Chicago Tribune includes additional testimony to the popularity of the magazine among its readers:

"It is very interesting to step in, of a morning, to the publishing house of Fields, Osgood & Co., to see what the mail has brought them from the patrons of a single one of their periodicals—'Our Young Folks.' This juvenile magazine has achieved a most substantial success. Its present circulation is fifty thousand copies, and the rate of increase was never more rapid than now. The prospectus for the new year, with its promise of papers of juvenile science by Mrs. Agassiz, practical instruction by Edward E. Hale, adventurous biography by Mr. Parton, and so forth, and the specimen number issued for January, with the beginning of Mr. T. B. Aldrich's wonderfully taking 'Story of a Bad Boy,' have given the present impetus to subscriptions. But I began to speak of the examination of papers of the morning mail. This brings, at this time of year, an average of 500 letters daily to this department of the store—a pile very formidable on the desk, and requiring several hours of steady labor to attend to. The children themselves write most of the letters: and it is exceedingly curious to see the quaint epistolary methods, and the odd phraseology, which these young folks pick up in their early essays at business correspondence. A remarkably large portion of them come from the Northwest; almost every town in Illinois, Minnesota, Wisconsin, Iowa, Ohio, Indiana, and Michigan is represented in one morning's mail. One enthusiastic youngster in Madison, who has had every number from the beginning, says he would rather go to every number than to his dinner. He has a little magazine, 'Real Folks,' the little boy has written all the kind things said of it by his friends, old and young; and its growing popularity, while it steadily adheres to its plan of developing a taste for the very best literature, is one of the most gratifying signs of the time, so far as the rising generation is concerned."

TERMS.—\$2.00, in advance; 3 copies, \$5.00; 5 copies, \$8.00; 10 copies, \$15.00, and \$1.50 for each additional copy.

N. B.—A copy of "OUR YOUNG FOLKS" for 1869 will be sent GRATIS to any person who will act as agent and raise a club for the Magazine.

Specimen Copy, Premium List, Circulars, etc., sent upon application. The "ATLANTIC" and "OUR YOUNG FOLKS" sent to one address for \$5.00 per annum.

FIELDS, OSGOOD & CO., Publishers, (Successors to Ticknor & Fields,) 124 Tremont Street, Boston.

The leading Serial Story for "OUR YOUNG FOLKS" for 1869 is

"THE STORY OF A BAD BOY."

BY T. B. ALDRICH.

To indicate its general character, and its great superiority to ordinary stories for youthful readers, the Introductory Chapter is given:

This is the story of a bad boy. Well, not such a very bad, but a pretty bad boy; and I ought to know, for I am, or rather I was, that boy myself.

Lest the title should mislead the reader, I hasten to assure him here that I have no dark confessions to make. I call my story the story of a bad boy, partly to distinguish myself from those faultless young gentlemen who generally figure in narratives of this kind, and partly because I really was not a cherub. I may truthfully say I was an amiable, impulsive lad, blessed with fine digestive powers, and no hypocrite. I didn't want to be an angel and with the angels stand; I didn't think the missionary tracts presented to me by the Rev. Wilbur Hawkins were half so nice as Robinson Crusoe; and I didn't send my little pocket money to the natives of the Fejee Islands, but spent it royally in peppermint-drops and taffy candy. In short, I was a real human boy, such as you may meet anywhere in New England, and no more like the impossible boy in a story-book than a sound orange is like one that has been sucked dry. But let us begin at the beginning.

Whenever a new scholar came to our school I used to confront him at recess with the following words: "My name's Tom Bailey; what's your name?" If the name struck me favorably, I shook hands with the new pupil cordially; but if it didn't I would turn on my heel, for I was particular on this point. Such names as Higgins, Wiggins, and Spriggins, were deadly affronts to my ear; while Langdon, Wallace, Blake, and the like, were passwords to my confidence and esteem.

Ah me! some of those dear fellows are rather elderly boys by this time,—lawyers, merchants, sea-captains, soldiers, authors, what not? Phil Adams (a special good name that Adams) is consul at Shanghai, where I picture him to myself with his head closely shaved,—he never had too much hair,—and a long pigtail hanging behind. He is married, I hear, and I hope he and she that was Miss Wang Wang are very happy together, sitting cross-legged over their diminutive cups of tea in a sky-blue towel hung with bells. It is so I think of him; to me he is henceforth a jeweled mandarin, talking nothing but broken China. Whitcomb is a judge, sedate and wise, with spectacles balanced on the bridge of that remarkable nose which, in former days, was so plentifully sprinkled with freckles that the boys christened him Pepper Whitcomb. Just to think of little Pepper Whitcomb being a judge! What would he do to me now, I wonder, if I were to sing out "Pepper!" some day in court? Fred Langdon is in California, in the native-wine business,—he used to make the best licorice-water I ever tasted! Binny Wallace sleeps in the Old South Burying-ground; and Jack Harris, too, is dead,—Harris, who commanded us boys, of old, in the famous snow-ball battles of Slater's Hill. Was it yesterday I saw him at the head of his regiment on its way to join the shattered Army of the Potomac? Not yesterday, but five years ago. It was at the battle of the Seven Pines. Gallant Jack Harris, that never drew rein until he had dashed into the Rebel battery! So they found him—lying across the enemy's guns.

How we have parted, and wandered, and married, and died! I wonder what has become of all the boys who went to the Temple Grammar School at Rivermouth when I was a youngster?

"All, all are gone, the old familiar faces!"

It is with no ungentle hand I summon them back, for a moment, from that Past which has closed upon them and upon me. How pleasantly they live again in my memory! Happy, magical Past, in whose fairy atmosphere even Conway, mine ancient foe, stands forth transfigured, with a sort of dreamy glory encircling his bright red hair!

With the old-school formula I commence these sketches of my boyhood. My name is Tom Bailey; what is yours, gentle reader? I take for granted it is neither Wiggins nor Spriggins, and that we shall get on amicably together in the pages of this magazine, and be capital friends forever.

LYNN, MASS., Jan. 6, 1869.

MESSRS. FIELDS & OSGOOD.—DEAR SIR:—I take for granted it is "The Story of a Bad Boy" a real, true story, or only made up? It begins bully, anyhow. I want to know where is Rivermouth? I can't find it on the map anywhere. My brother says Mr. Trowbridge's "Glass Making" is good. He says Mr. Trowbridge is a regular blower. He's only joking. Yours,

WORCESTER, Jan. 4, 1869.

GENTLEMEN:—Our teacher proposes to use "Our Young Folks" as a reading book during this year. We think it will be quite nice to have something fresh and interesting to read, instead of the same old selections which we know by heart. How much will it cost to have twelve copies of "Our Young Folks" sent? Will they be any cheaper than if each boy should subscribe by himself? Please answer soon.

I remain yours,

Good as "OUR YOUNG FOLKS" has heretofore been, its value for the present year will be greatly increased by the prominence given to *practical* and *instructive* features; to Biography, History, Industrial Subjects, Scientific Articles of a popular yet thoroughly reliable character, Gardening, Declamations and Dialogues. Special attention is invited to the following outline of the leading features of

"OUR YOUNG FOLKS" for 1869.

THE STORY OF A BAD BOY.

BY T. B. ALDRICH.

will be the leading Serial Story in "OUR YOUNG FOLKS" for the year 1869, and promises to be one of the brightest and most entertaining stories ever written for youthful readers.

GARDENING FOR GIRLS.

A highly interesting and important story, written by the Author of "Six Hundred Dollars a Year," and intended to convey hints to young girls as to a useful disposal of their time, and to give valuable assistance in the Study of Botany, serving the purpose for them which was answered for boys in the admirable serial, "Farming for Boys."

HOW TO DO IT.

EDWARD EVERETT HALE will contribute various papers, written for the practical instruction of grown-up boys and girls, and of our young men and women, in the methods of life. They will include suggestions as to the way—How to Talk; How to Read; How to Write; How to Travel; How to Act in Society; and How to Work.

THE WORLD WE LIVE ON.

MRS. AGASSIZ will give a series of papers, explaining in a familiar way many of the phenomena observed in the world about us. She will give an account of the coal deposits, and explain the way in which the coral insects construct islands in the ocean. She will also explain how and why earthquakes occur, and describe some of the more noted ones.

THE GREAT NAVIGATORS, VOYAGERS, AND DISCOVERERS.

MR. JAMES PARTON will contribute a number of Biographical Sketches, taking as his subjects the lives of some of the most eminent navigators and discoverers. These will include Prince Henry of Portugal, Diaz, Vasco da Gama, Magellan, Columbus, John and Sebastian Cabot, Champlain, Hudson, and others.

DIALOGUES.

MR. EPES SARGENT will furnish a number of new Dialogues, adapted to School Exhibitions and Private Representations.

AMERICAN HISTORY

will be presented in articles by MR. J. H. A. DONE.

HUMAN BEES.

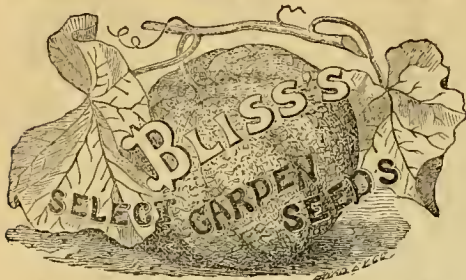
MR. TROWBRIDGE will describe some of the more important and interesting branches of human industry, such as GLASS-MAKING, COAL-MINING, SHIP-BUILDING.

NATURE AND OUT-DOOR LIFE

will be the subject of articles by the author of "The Seven Little Sisters," to which others will be added by MR. CHARLES J. FOSTER, and by MR. W. F. G. SHANKS, who will furnish papers upon the FIRE-DAMP, WRECKS and WRECKING, etc.

DECLAMATIONS.

DECLAMATIONS of an entirely fresh character will be furnished by REV. ELIJAH KELLOGG, author of "Spartacus," and "Icilius."



B. K. BLISS & SON,

Nos. 41 Park Row & 151 Nassau Sts., New York,

(Formerly of Springfield, Mass.)

Importers, Growers and Dealers in
Garden, Field, and Flower Seeds,

Horticultural Implements and Garden
Requisites,

World invite the attention of all who are interested in the culture of **Flowers and Vegetables**, to their large and well-selected assortment of the above, comprising the newest and most approved varieties, both of European and home production, the quality and utility of which cannot be surpassed. For a list of these see their

**NEW ILLUSTRATED SEED CATALOGUE,
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The *Fifteenth Annual Edition*, enlarged and improved, contains 132 pages of closely printed matter, beautifully illustrated with 100 Engravings, and a descriptive list of 2,500 varieties of *Flower, Vegetable and Agricultural Seeds*, including all the novelties of the past season, with explicit directions for their culture; also, a list of 125 varieties of *French Hybrid Gladioli*, embracing many new sorts now offered for the first time in this country—with many other *Summer Flowering Bulbs*, consisting of *Amaryllis, Tuberoses, Tigridius, Lilies*, etc.; with much other useful information upon the subject of gardening generally. A copy will be mailed to all applicants upon receipt of 25 Cents. Our regular customers supplied without charge.

**Bliss' Gardeners' Almanac
for 1869**

Contains 63 pages of closely printed matter, embracing a *Monthly Calendar of operations*, and a priced list of the leading varieties of *Grains, Fodder and Flower Seeds*, with brief directions for their cultivation. A copy will be mailed to all applicants enclosing a three cent stamp.

Address B. K. BLISS & SON, Box 5,712 P. O.,
41 Park Row, and 151 Nassau-st., New York.

Tomatoes, Tomatoes.

KING OF THE TOMATOES.—A new and superior variety of this valuable esculent, combining more good qualities than any other variety in cultivation. Plant strong and vigorous; fruit, above medium size, grows in clusters; firm, round, somewhat flattened at the ends, seldom creased or wrinkled; color, a deep, rich red, very slow and attractive in appearance; flesh, very solid, with but few seeds, of fine flavor; very productive, ripens with the Tilden. Its great beauty and remarkable keeping properties make it a most desirable market variety, while its solidity and agreeable flavor make it equally desirable for canning. Price 25 cts. per packet; 5 packets for \$1.

GENERAL CRANT.—Size, above the medium, three to four inches in diameter, growing in clusters, firm, round, slightly flattened, very regular, symmetrical, and rarely ribbed or wrinkled; color, brilliant, glossy crimson; flesh, unusually firm, solid, and free from water; weighing from ten to twenty pounds more per bush than any other variety; skin, remarkably fine, smooth and shining, coloring well up to the stem; very productive, and of the finest flavor, bears carriage well, and keeps in good condition a long time after being gathered. 25 cts. per packet; 3 packets for \$1.

CRIMSON CLUSTER TOMATO.—This variety grows in clusters of from 15 to 20, each cluster weighing from 4 to 6 pounds. Fruit, of first quality and very early, perfectly smooth, of average size, and of a scarlet crimson color, delicately tinted with specks of pure golden yellow. It ripens if whole cluster at once. 25 cts. per packet; 5 packets for \$1.

BOSTON MARKET.—An improved variety of the "Large Smooth Red"; very productive, showy, and of superior quality. It is extensively grown by the market gardeners in the vicinity of Boston, who esteem it above all others as a market variety. Our seed was selected from the stock of one of the most successful growers in New England. Per packet 15 cts.; per ounce 7 cts.

ORANGE-FIELD PROLIFIC.—An English variety of great merit. The experience of the past season fully confirms what we stated of this variety when we first offered it last spring, and we have no hesitation in pronouncing it the earliest and one of the most productive varieties in cultivation. In our trial-grounds it proved a week earlier than any other variety on our Catalogue. The dwarf and compact growth of the plant makes it particularly desirable for forcing. Per packet 25 cts.; five packets for \$1.

One packet of each of the above varieties \$1.00. Also the following well-known varieties at 10 cts. per packet: *Keen's Early, Cedar Hill, Tilden, Maunpoy's, Sim's, Earl's Cluster, Extra Early York, Cook's Favorite, Mammoth Chihuahua, Larue's, Best Smooth, Nice, Perfected, Pear, Cherry, Strawberry, etc., etc.*

NEW CROP ONION SEED.

Red Wethersfield, Yellow Dauvers and White Portugal, grown for us in Connecticut the past season. One ounce 50 cts.; 4 ounces \$1.75; 1 pound \$6.00, mailed postpaid to any address upon receipt of price.

Address B. K. BLISS & SON, P. O. Box 5,712,
Nos. 41 Park Row and 151 Nassau-st., New York.

New and Choice Potatoes.

CLIMAX.

This CLIMAX is a seedling of the Early Goodrich, and is thus described by the savor:

"It has a stout, erect stalk, large leaves; tuber, about medium size, smooth, cylindrical, one, two, or three; eyes, shallow, but strongly defined; skin, considerably netted or russet, tough, white; flesh, entirely white, solid, heavy, brittle, and never hollow; boils through quickly, with no hard core at center, is mealy, of floury whiteness, and of superior table quality. It is equally productive with the Early Rose, but a few days later, earlier than the Early Goodrich, while its keeping qualities are as good as the Peachblows." Price \$3.00 per pound, by mail, post-paid.

BRESEE'S PROLIFIC (or No. 2).

This remarkable variety originated with Albert Bresee, Esq., of Hubbardton, Vermont, who was also the originator of the justly celebrated *Early Rose*, both varieties being produced from the same seed-bait of the Garnet Chili.

The vines of *Bresee's Prolific* are of medium height, quite bushy, somewhat spreading, large leaves, have produced no seed-balls. Tubers, large, regular in shape, and very smooth, slightly oblong, somewhat flattened. Skin, dull white, inclining to be russeted; eyes, but little depressed and slightly pinkish; flesh, white, cooks quickly, is very mealy, and of excellent quality, yield very large, often exceeding *One Hundred fold*, matures about three weeks later than the *Early Rose*, and will prove a most valuable variety for field culture. A silver medal was awarded to this variety at the annual exhibition of the Mass. Hort. Society, last September. Price \$3.00 per pound by mail, post-paid.

EARLY ROSE.

Among the many thousands of our patrons to whom we furnished this valuable Potato last spring, we have yet to hear from the first one who is not fully satisfied with his purchase. The only regret expressed is that they had not procured more. We are daily in receipt of the most flattering testimonials, not only of its earliness and good quality, but of its astonishing productiveness, some of which seem almost fabulous. Several reports of having grown a barrel from a single pound; a yield of one hundred fold is an every-day occurrence. The following well-known gentlemen have given it their unqualified approval, and endorse it as the best, most productive, and earliest variety in cultivation: Hon. Marshall P. Wilder, Chas. Downing, Esq., Rev. Henry Ward Beecher, Fearing Burr, Esq., Dr. J. G. Holland, (Timothy Titcomb), and many other prominent agriculturists, horticulturists, and market gardeners. We shall continue to execute cash orders through the month of February at the following prices:

One pound, \$1.00; Three pounds, \$2.00, by mail, post-paid. One peck, (15 lbs.), \$5.00; 1/2 bush, \$8.00; 1 bush, (60 lbs.), \$15.00; 1 hbl., (165 lbs.) \$40.00. Prices to the trade, in larger quantities, will be given upon application. The freight on all packages by express, boat, or railroad, to be paid by the purchaser. No charge for packages or cartage.

Upon receipt of \$5.00 we will mail, post-paid, to any address in the United States or British Provinces, ONE POUND EACH OF THE CLIMAX, BRESEE'S PROLIFIC, and the EARLY ROSE. Orders will be booked in the order in which they are received, and the potatoes forwarded on and after April first, when they will be free from danger of frost. They can be forwarded earlier if desired, at the risk of the purchaser. No orders will be accepted unless accompanied with the cash.

In addition to the above, we have a large stock of EARLY SEEDS, EARLY GOODRICH, VANDEVER'S SEEDLING, JACKSON WHITE, HARRISON, &c., which we offer at the lowest market prices.

Our descriptive priced list of potatoes mailed to all applicants.

B. K. BLISS & SON.

41 Park Row and 151 Nassau-st., New York.
(P. O. Box 5,712.) Formerly of Springfield, Mass.

GREGORY'S ANNUAL LIST

OF

Choice Garden Seeds.

Having in former years introduced to the public the Hubbard Squash, American Turban Squash, Marblehead Mammoth Cabbage, Cannon Ball Cabbage, Mexican Sweet Corn, Brown's New Dwarf Marrowfat Pea, Boston Curled Lettuce, and other new and valuable vegetables, with the return of another season, I am again prepared to supply the public with seed of the purest quality of any of the above, and also many other new and rare kinds. My Annual Seed Catalogue, containing a list not only of all novelties, but also of the standard vegetables of the garden, (over one hundred of which are of my own growing), will be forwarded gratis to all who write for it.

A package of any of the varieties in the following list (of which a full description will be found in my Catalogue) will be forwarded to any address for 25 Cents, and warranted to reach each purchaser.

Alger Tomato, Gen. Grant Tomato, Marblehead Mammoth Cabbage, Cannon Ball Cabbage, Fattler's Improved Brunswick Cabbage, Carter's Dwarf Mammoth Cauliflower, Carter's Champion Broccoli, Ornamental Kale, Mammoth French Squash, Norrithon Giant Cucumber, Sugar Trough Gourds, Vegetable Caterpillars, etc.

Also, the following kinds at 15 Cents per package: White Japan Cucumber, Columbia Sweet Corn, Alton Nutmeg Melon, New White Tomato, Boston Market Tomato, Orange-field Tomato, Mammoth Tomato, Cedar Hill Tomato, Maunpoy's Tomato, Early York Tomato, Alsike Clover, Berberry Seed, New York Farmers' Club Sweet Corn, Giant Wax Bean, Early Fejee Bean, Concord Bean, Herring's New Turnip Beet, White Japan Mustard, Phoenix's New Watermelon, Boston Market Celery, Reed's Latticess Celery, Ornamental Gourds, Mammoth Millet, Mammoth Russian Sunflower, Striped-leaved Japanese Maize, Improved American Savoy Cabbage, Early Umi Savoy Cabbage, Jersey Cow Kale, Bates' Extra Early Sweet Corn, Mammoth Plant Corn, Mexican Sweet Corn, Dwarf Broom-corn, Hubbard Squash, American Turban Squash, and Improved Long Green Cucumber.

All seed ordered warranted to reach my customers. For full details, describing each of the above and many other new varieties, see my Catalogue, which I shall be happy to forward gratis to all.

JAMES J. H. GREGORY,
Marblehead, Mass.

VALUABLE CATALOGUE.—See last page of cover.

CUCUMBER, GEN. GRANT.



A superior variety, either for forcing or for culture in the open ground. It is perfect in form, solid and crisp, and of a most agreeable flavor. Many specimens were grown the past season averaging thirty inches in length. After a five years' trial, we unhesitatingly pronounce it better than any other variety for forcing.

Packets, containing 10 seeds, 25 cents. Five Packets for \$1.00.

**Conover's
COLOSSAL
ASPARAGUS.**

A European variety, introduced several years since, which, by a careful selection of seeds from the most vigorous shoots, has been wonderfully improved, both in size and quality, in point of which it surpasses all other varieties in cultivation. Specimens were exhibited the past season, by Mr. Conover, which were grown along side the best "Oyster Bay" varieties, and received the same care and treatment, which attained four times the size of that popular variety. Though but two years from the seed, many of the plants produced from twenty to thirty sprouts, averaging from two to four inches in circumference, and were ready for cutting one year in advance of the ordinary varieties. Packets, containing 1/2 ounce, 50 cents. B. K. BLISS & SON, 41 Park Row, and 151 Nassau St., New York, (P. O. Box, 5,712), formerly of Springfield, Mass.

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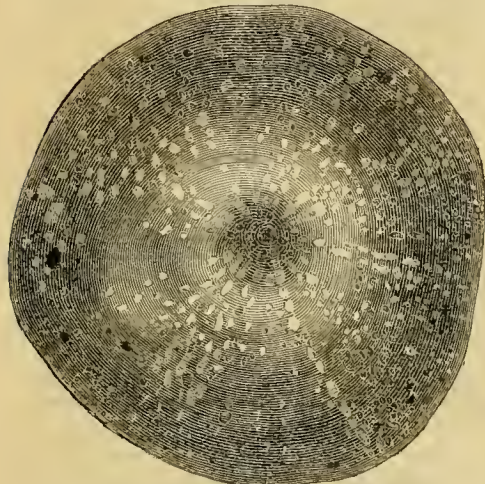
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FOR

Market or Private Gardens,

Of such kinds and qualities as we use in our Market Gardens at Bergen City, New Jersey.

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The cut represents one fruit of the cluster, which ranges from 15 to 30 on each; this we deem a most interesting and valuable new variety. For description see catalogue. Price per packet 25 cts., \$2.50 per doz., \$15.00 per 100.

	per ounce.	per lb.
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Beets, Early Bassano, Short Top Round.....	20 "	2.00
" Pine Apple, Long Dark Blood.....	20 "	2.00
Cabbage, Early true Jersey Wakefield.....	1.50 "	16.00
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Carrot, Early Horn, Long Orange.....	15 "	1.50
Cauliflower, Early Paris, Nonpareil.....	3.00 "	40.00
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Dwarf.....	1.00 "	12.00
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Cucumber, White Spine, Cluster, Long.....		
Green, Early Frame.....	15 "	1.25
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(Water) Ice Cream, L. Island.....	15 "	1.25
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Pumpkin, Cheese, Connecticut Field.....	10 "	75
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Squash, Early Bush, Crookneck.....	10 "	1.25
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Tomato, Early Smooth Red, Fejee.....	40 "	4.00
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Herbs, Thyme, Sweet Marjoram.....	50 "	6.00
" Sage, Summer Savory.....	50 "	5.00
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(Pole), London Horticultural, Red Cranberry.....	50 "	12.00
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PLANTS AND ROOTS.

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Onion Sets, Yellow Danvers, Yellow Dutch.....	\$ 50 cts.	\$10.00
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Cauliflower, Hot-bed, \$2.00 per 100;.....	\$15 per 1,000.	
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For other varieties of Vegetable Seeds, together with Flower Seeds, Fertilizers, Implements, etc., send for Illustrated Descriptive Catalogue, which will be mailed with that of New and Rare Plants upon receipt of 25 cents.

To our customers of last season they will be mailed, as usual, without charge.

HENDERSON & FLEMING, SEEDSMEN, AND MARKET GARDENERS, 67 Nassau Street, NEW YORK.

SIDELL'S SOLID MAMMOTH.

LARGEST, FIRMEST, AND BEST

NEW TOMATO.

I offer seed of this Tomato, believing it to be superior to any other, and very near to perfection in all its points. It is BRIGHT RED, very prolific, SMOOTH, SOLID, large, and EARLY as Smooth Red.

See notice by Col. Weld, Associate Editor of *Agriculturist*, with engraving, in *American Horticultural Annual* for 1869. Price 25 cents per packet; 5 for \$1.

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ON THE AMERICAN & EUROPEAN PLAN, Cor. BEEKMAN and NASSAU STS., Near City Hall Park, NEW YORK. GEORGE WIGHT, Proprietor.

N. B.—Located in the very heart of the wholesale business this is one of the most conveniently located Hotels for Merchants, Business men and others visiting the city.

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Awarded a Silver Medal at the Paris Exposition. Greatly improved and reduced to nearly half its original weight and price. We are prepared to fill orders for spring work. Farmers, send for Circular. EDWARD P. ALLIS & CO., Milwaukee, Wisconsin.

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1st.—I insure all the seed I send out to be as represented. 2d.—I insure all seed ordered shall reach my customers. 3d.—I insure all moneys sent to my address (sums of \$5 and upwards taken in P. O. Orders, or Cashiers' Checks), will reach me. No fair man can ask more than this. *Catalogues gratis to all.* JAMES J. H. GREGORY, Marblehead, Mass.

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18th Year; 400 Acres; 10 Green-houses. Fruit and Ornamental Trees, Nursery Stocks, Small Evergreens, Forest Trees, Hedge Plants, Roses, Grapes, Evergreens, Green-house and Bedding Plants, all of best sorts and shipping sizes. Send 10c. for three spring Catalogues. Bloomington Nursery, F. K. PIGENIX, McLean Co., Ill.

THE BEST BLACKBERRY.—See last page of cover.

WONDERFUL RAPIDITY.

Perfectly Regular and EVEN DISTRIBUTION OF THE SEED. **CAHOON'S PATENT BROADCAST SEED SOWER,** FOR SOWING ALL KINDS OF GRAIN AND GRASS SEED.



This machine has been in use in a few localities for the past ten years, and has proved itself by long trial to be an invaluable implement. The proprietor of the Patent, having been largely engaged in another branch of business, neglected to bring it into public notice.

The subscribers having long known it to be an efficient and very much needed machine by agriculturists everywhere, have recently bought, at large expense, the entire right of manufacture and sale of it, throughout the United States, and are now prepared to supply the trade.

The greatest value of this implement consists in the fact that it distributes the grain evenly in the most perfect manner, thus insuring a larger crop than can be obtained from any other mode of seeding.

Its operation is so simple that anybody can readily use it. The Hand Machine sows from 6 to 8 acres of wheat per hour, and the Power Machines from 15 to 20. It sows

WHEAT, RYE, BARLEY, HEMP, OATS, CLOVER, and HERDS GRASS or TIMOTHY SEED perfectly, and is invaluable for sowing Guano, Superphosphate, or any dry Fertilizer.

We want every farmer in this country to buy one of these machines. Buy them of the nearest dealer in Agricultural Implements, if you can, but if you cannot, we will box and forward by express a Hand Machine on receipt of Ten Dollars, and a Power Machine on receipt of Sixty Dollars. We make a liberal discount to the trade.

We could furnish hundreds of testimonials, but have room only for the following:

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MESSRS. D. H. GOODELL & Co., of ANTRIM, N. H., have this day purchased of me the SOLE Right to manufacture and sell "CAHOON BROADCAST SEED SOWERS," in the United States. They will soon be able to supply the largely increasing demand, and all orders should be addressed as above.

The validity of this patent has been fully established after one of the most exhaustive suits known to Patent Law, and fully believing any practical Seed Sower operating by centrifugal force to be an infringement, I caution the Public against buying or selling any other than the "CAHOON MACHINE," as all infringements will be Promptly Prosecuted.

HENRY H. FURBISH.

Assignee of all Cahoon Seed Sower Patents. SAN FRANCISCO, CAL., 14th May, 1868.

GENTLEMEN:—The "CAHOON BROADCAST SEED SOWER," Hand and Power, are universally used in California, and give entire satisfaction. We sell no other, and no other could sell along side of them. They are the very embodiment of utility. Yours Respectfully,

TREADWELL & CO.

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GENTLEMEN:—I have been using your Power Machine for the last nine years, and I can safely say, it is the best and most durable BROADCAST SOWER that was ever brought before the farming community. I would not be obliged to do without it for three times its cost. I have averaged sowing three hundred acres a year for the past nine years, and therefore think I am competent to judge of the Machine. I could not buy a Machine that would suit me as well, or do the amount of sowing that I have every year. To accommodate my friends, I often go three or four miles away from home to sow grass seed, and I can sow it to perfection, no matter which way the wind blows. I am confident I can beat any one sowing by hand. The agent told me when I bought the Machine if I could sow more evenly by hand he would make me a present of the machine, but I never tried and do not care to. Very Truly Yours,

B. H. KESSNER.

D. H. GOODELL & CO., Sole Manufacturers, Antrim, N. H.

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The aim of this paper is to furnish a pictorial history of current events. Between thirty and forty illustrations appear in every weekly number, including eight engravings of the pictorial spirit of the foreign press, events of national or local interest, railroad or steamboat accidents, amusing and thrilling incidents, comics, &c. The literary matter comprises, besides well written editorials on the leading questions of the day, and descriptions of the engravings, a serial story of thrilling interest, entertaining narratives and tales, humorous anecdotes, choice poems, &c.
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A purely literary pictorial. Excluding events of the day, its aim, as its title indicates, is to furnish amusement for the leisure hour. Its contents consist principally of original stories by able writers,—including a serial, accounts of remarkable adventures, biographical sketches of self-made men—with portraits,—descriptions of manners and customs in remote countries, short poems, fairy stories, enigmas, conundrums, charades, &c. Illustrated with large and spirited engravings, of which there are from fifteen to twenty in each weekly number.
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The leading fashion periodical in America. Each monthly number contains a large colored plate of the latest fashions, from designs sent from Paris as soon as invented, which are thus published simultaneously in New York and Paris; also a four-page uncolored fashion plate, embracing the various leading styles. These are accompanied with full descriptions and explanations, with numerous other illustrations. Every number contains an original letter from Paris describing the very latest modes, by a lady whose position gives her access to fashionable society. The literary portion of this Magazine comprises a continued story, numerous interesting tales, poetry, anecdotes, &c. The whole profusely illustrated with fine engravings.
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Is the fastest, cheapest, and best for cutting Turnips, Carrots, Beets or Potatoes, fine or coarse. Need not be paid for till tried and found satisfactory. Send for Illustrated Circular. Agents wanted. PEEKSKILL FLOW WORKS, Peekskill, N. Y., or Cleveland, O.

THE BEST CURRANT.—See last page of cover,

THE AMERICAN AGRICULTURAL ANNUAL

For 1869.



A YEAR-BOOK WANTED BY EVERYBODY.

This volume contains a variety of information of interest and importance to farmers, concluding with a *Farm-er's Directory* in which a list is given of the principal dealers in implements, fertilizers, seeds, horses, cattle, sheep, swine, and poultry.

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For 1869.



A YEAR-BOOK FOR EVERY HOME.

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- BARRY, HOOPES,
- ELLIOTT, SUCH,
- FULLER, PARSONS,
- BRILL, GREGORY,

and others identified with American horticulture.

It contains a number of

BEAUTIFUL ILLUSTRATIONS.

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A TREATISE

ON THE

Chemical Composition, Structure, and Life of the Plant,

FOR ALL STUDENTS OF AGRICULTURE.

WITH NUMEROUS ILLUSTRATIONS AND TABLES
OF ANALYSES,

BY

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PROFESSOR OF ANALYTICAL AND AGRICULTURAL CHEMISTRY IN YALE COLLEGE; CHEMIST TO THE CONN. STATE AGRICULTURAL SOCIETY; MEMBER OF THE NATIONAL ACADEMY OF SCIENCES.

This is a volume of nearly 400 pages, in which Agricultural Plants, or "Crops," are considered from three distinct, yet closely related, stand-points, as indicated by the descriptive title.

The Chemical Composition of the Plant

Is discussed in three Chapters.

- 1st.—*The Volatile Part.*
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- 3d.—*Composition of the Plant in various Stages of Growth,* and the Relations subsisting among the Ingredients.

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Is the subject of the Second Division, in which are discussed

- The Primary Elements of Organic Structure.*
- The Vegetative Organs*—Root, Stem, and Leaf, and their Functions; and
- The Reproductive Organs, viz.,* Flowers and Fruit, and the Vitality of Seeds with their Influence on the Plants they produce.

The Life of the Plant

Forms the Third Division, under which are discussed the Phenomena of

- Germination,* and the conditions most favorable and unfavorable to it.
- The Food of the Plant* when independent of the Seed.
- Sap and its Motions,* etc., etc.

THE APPENDIX, which consists of 12 Tables exhibiting the Composition of a great number of Plants viewed from many different stand-points, will be found of inestimable value to practical agriculturists, students, and theorists.

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GRAPE VINES.

Iona, Isabella, Delaware, Diana, Concord, Ives, for garden and vineyard. A large stock of Concord, 1 and 2 years old, from \$35 to \$50 per 1,000. Very fine Iona vines, 1 year old, especially adapted for Clusters, and for gardens and small vineyards. Iona, 1 and 2 years old, for general vineyard planting. All the above at extremely low prices, by dozen or quantity. Terms to Clubs especially favorable.

THE EUMELAN

Is offered to the public as a grape far above all others in its adaptation to meet the wants of the present time.

It is a black grape (dark blue), entirely exempt from all native defects, and equal to the best European kinds for the table and for wine.

It is very vigorous, hardy, and productive. Though ripening earliest of all, (earlier than Hartford), its fruit hangs to the end of the season without shriveling, and is among the best for late-keeping.

It has no near competitor for making red wine, and is the only one of this country that can bear any comparison with the fine European kinds for that purpose. To all who desire to take an active part in the advancement of American grape culture, the present affords an advantageous opportunity that cannot be expected to recur. By extensive trial it has shown itself particularly hardy, and adapted for general cultivation in gardens; and sufficient trial has been made to leave no doubt that it is well adapted for vineyard culture in all measurably favorable localities. For full account send for Pamphlet, General and Special Price Lists, and Club propositions.

The Advantages to Clubs are greater than ever before offered.

AGENTS WANTED for every village where there are not any at present engaged.

Vines 1 and 2 years old, of very fine quality; a few of extra quality.

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Iona, (near Peckskill) N. Y.

SMALL FRUIT INSTRUCTOR.

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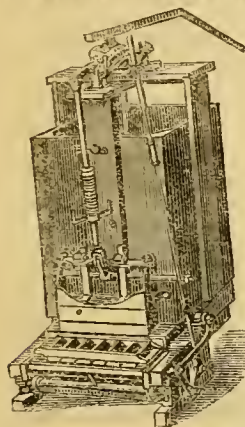
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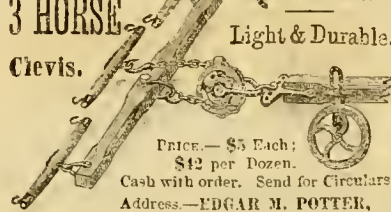
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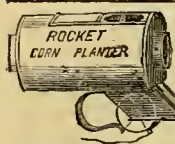
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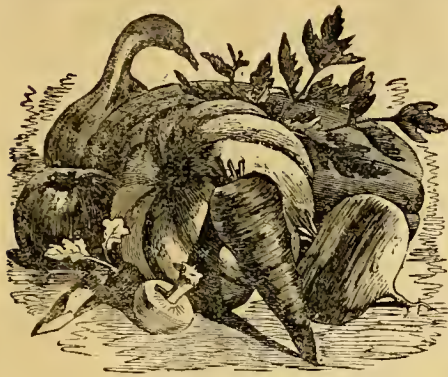
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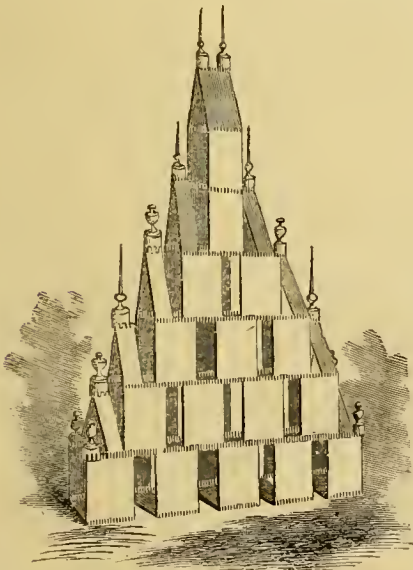
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10 Java Coffee, raw. "at 35.....	3.50
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1 Imperial.....Horace Morgan.....	at 1.25.....	1.25
1 Black.....at 1.25.....	1.25
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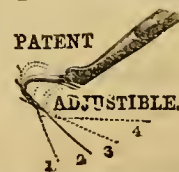
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VOLUME XXVIII.—No. 3.

NEW YORK, MARCH, 1869.

NEW SERIES—No. 266.



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SHAD FISHING.—DRAWN BY EDWIN FORBES.—Engraved for the American Agriculturist

Every farmer has, or should have, an interest in a body of water adjoining or upon his farm, whether it be a pond, lake, or river. Fish culture and protection are subjects which are just now attracting the attention not only of individuals but of legislatures. We have long enough given to the sea, and now it is well to look for a return. Among the fishes of prime importance, wherever there is a stream connecting with the sea, is the shad. The shad is an ocean fish, which spawns in fresh water, and is caught in the rivers from March until July, in New England, or earlier in the southern waters.

On account of dams and other obstructions which have been placed in our rivers, the abundance of this admirable fish yearly diminishes, and it is well that legal measures have been taken for its protection. Shad are caught in various ways. The fishermen along the coast capture large numbers in pound-nets and fykes. When they enter the rivers they are taken in different kinds of nets. One of the most common of these is the gill-net, which has a length proportioned to the width of the river, and is usually about sixteen feet deep, with meshes five and a half inches wide. The fish on their passage up

stream are arrested by the net, and upon attempting to back out are caught by the gills and held until the net is lifted. The net is held in place by long poles, as shown in the illustration; these are driven into the bed of the river, often, as is the case on the Hudson, to the annoyance of navigators. To fish in this way requires a large capital for boats, nets, poles, and labor. It is estimated that at least \$5,000,000 are invested in this branch of industry. The artist has chosen low tide at night for his sketch. One disposed to be facetious might say that this most effectively showed shadows and shadders,

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Back Volumes Supplied.—The back volumes of the *Agriculturist* are very valuable. They contain information upon every topic connected with rural life, out-door and in-door, and the last ten volumes make up a very complete library. Each volume has a full index for ready reference to any desired topic. We have on hand, and print from electrolyte plates as wanted, all the numbers and volumes for ten years past, beginning with 1857—that is, Vol. 16 to Vol. 27, inclusive. Any of these volumes sent complete (in numbers) at \$1.75 each, post-paid, (or \$1.50 if taken at the office). The volumes, neatly bound, are supplied for \$2 each, or \$2.50 if to be sent by mail. Any single numbers of the past ten years will be supplied, post-paid, for 15 cents each.

AMERICAN AGRICULTURIST.

NEW-YORK, MARCH, 1869.

Up to the time of writing, the winter has been unusually mild and pleasant along the Atlantic coast. There have been comparatively few snow storms reported, and the cold has been by no means so great as that of last year. The anticipations of an early spring were blasted then, and the fickleness of the season may give us early bland airs, freedom from frost in the soil, and good weather to push forward spring work this year; but, in the natural order of things, this can hardly be expected. A warm winter is often followed by a rough, harsh, cold, wet spring. Winter may linger, and we may thus have full time to get ready to make the very most of the good weather when it comes. Make full memorandums at once of those kinds of work which ought to be done—work for rainy weather, work for freezing weather, work for fair weather when the soil is too wet to plow, and proper field work. Know beforehand how much labor can be profitably employed at each job, and calculate, if possible, to leave yourself free for extra work, not included beforehand in your calculations, or to take hold and finish up any job that drags, and requires more time than planned for. We have often compared well-considered plans to axle grease on the farm wagon.

Thousands of farmers are thinking anxiously about the seed they shall sow and plant. A more worthy subject for serious thought and investigation can hardly have their attention. The papers are full of advertisements and notices of new articles, from Norway oats to the most thoroughly established varieties of spring wheat. The effort to get something new that has merit enough to base great stories upon, and lead to sanguine expectations, leads to the introduction of many worthless things. Dealers generally care less for what is really good, than to know and to have what will sell. If seeds are scarce and high, as is onion seed this year, the temptation is very great to mix it with old seed. In England, it is very common to use the seeds of charlock, or some other cruciferous plants which have been heated, and the vitality destroyed, to mix with turnip seed. It is precisely on the principle of watering milk, and over-issuing railway stock. If possible, get samples, and see how many of the seeds will germinate, as directed for clover seed, on page 95. We are far from condemning the novelties, whatever price they bear; but this we are free to say, the price bears no direct ratio to their value. The fact that \$2 a quart is charged for oats, or \$50 apiece for potatoes, shows that there has been a good deal of interest excited by advertising, or otherwise, and that either the owners mean to put a nearly prohibitory price upon the articles, or believe they will make more this year and next by selling now at high rates. It often pays to buy at rather high prices, in order to raise one's own seed for another year, but it surely does not pay unless the article is of established excellence, and one knows he gets it genuine. Do not buy simply because very improbable and wonderful stories are told in print, or anywhere, about oats, Egyptian wheat, or any similar thing. The best way is, for several neighbors to club together, and thus get and examine samples. Do not expect to raise heavier grain than the seed you sow.

Hints About Work.

Breeding Animals must be well fed. A quart or two of oil meal daily, or an equivalent of rye bran, or coarse corn meal and wheat bran mixed, is good. If roots are plenty, eat up and feed four to eight quarts a day with the meal; if not, save them until just before calving, and after that, to be used until grass comes, or the rye for soiling is fit to eat.

Cows.—Prepare roomy, loose boxes for cows to calve in, and litter them well. The cows may be kept tied until the time actually comes, when it is best to give them the freedom of the box.

Mares should be treated in very much the same

way; a few carrots are an excellent addition to their diet, and roots and oil cake may be fed freely if care be taken that they do not induce too great laxness of the bowels; constipation is to be always guarded against in animals approaching parturition.

Sows should be especially guarded against it; and this is easily effected by feeding raw roots, mashed, and sprinkled with bran, to give them a relish, and to add to their nutritious value. The sow must have her quiet, warm nest, with plenty of straw, and be let alone. A big, blundering brute will not infrequently overlie her young, and kill many in this way. To prevent this in a measure, it has been advised to arrange slanting rails at the back of the pen, so that the sow can not crowd herself against the rear partition, and that the young may have a place of safety at all times. This is especially desirable if sows are cross, and inclined to eat their young ones. Such an unnatural appetite is usually accompanied by constipation and feverishness, which are relieved in most cases by the diet advised.

Sheep.—As the weather grows warmer, look out for ticks, scab, and lice. We have great faith in carbolic soap, and this may be applied without fear of injury to the animals. The wool should be parted, and the solution squirted in from a bottle with a quill in the cork, or poured from an oil can with a small nozzle. If ewes yearn early, have a care that the lambs do not get chilled; visit the pens frequently. Chilled lambs, apparently past sneer, may often be revived by bringing to the fire, giving warm baths, followed by friction with dry cloths, and a little mild milk punch.

Horses are often injured by their exertions to draw heavy wagons out of miry spots in the road. Spavins are frequently caused in this way. After such exertion, the horses' legs ought to be hand rubbed for an hour a day, for several days. This is a gentle friction by the hand up and down the legs. Coarse horses seldom require it, but high-bred ones are much benefited by the operation.

The Workshops.—Every farmer should at least have a good work-bench, tolerably supplied with carpenters' tools, and to these many may profitably add soldering irons, awls, and needles for mending harness, a rivet set and rivets, paint pots and brushes, and a variety of other tools. There is a great deal of work for rainy and cold days that may be done—like mending and painting farm implements, making bee-hives and honey-boxes, hens' nests, chicken coops, etc.

Surface Irrigation.—As the snows melt, the trickling streams carry fertility wherever they go. If they can be conducted from the roads upon the meadows, a marked increase will be noticed in

The Grass Crops, which may also be considerably increased by top-dressing with plaster, ashes, superphosphate of lime, Peruvian guano, and other soluble manures. It rarely pays to apply stable manure or composts at this season.

Liquid Manure on grass and grain fields, and on rye and wheat sown for soiling, is more advantageous in spring than at any other time. It should be applied as soon as the frost is out of the ground.

Clover.—See short article on page 95.

Field Work.—Animals must be gradually accustomed to hard labor, or their necks and shoulders may gall badly. Where galls or tender spots occur, they should be washed with castile soap and cold water, and covered over night with compresses of wet cloths. As more labor is demanded, increase the feed. Never plow when the ground packs hard from the moisture it contains. Some sandy soils never pack thus, and never bake into clods, but loamy and peaty soils do, and a field is often greatly injured if plowed a day or two too soon, or if worked in any way while wet.

Fences.—Before the ground settles after the coming out of the frost, and while it is yet too wet to plow, embrace the opportunity to reset old fences, and put up new ones. Try the posts, and strengthen weak ones by stakes driven along side; replace rotten rails with strong ones.

Poultry.—The present is a critical season with all kinds of poultry. If well fed and watched, a great

stock of eggs may usually be secured. Hens that steal their nests will usually become broody as soon as they have a dozen or fifteen eggs. So, if half a dozen hens lay in one nest, the nest full of eggs tends to stop the laying, and promote a desire to sit. The same is true of turkeys and ducks; perhaps also of geese, but in a less degree. Ducks ought to be shut up every night, and not let out before eight or nine o'clock in the morning, or not until each duck has laid an egg; thus they will keep on laying until July. Fowls must not be allowed to sit in exposed places; and if broods come off, they will die of cold and exposure, or fall victims to vermin, unless very carefully protected, and kept in warm, dry places. Old empty hay bays are very favorable for this purpose.

Getting out Manure.—This is work for frosty mornings, as the wheels and teams would cut up the land badly at other times; or it should be delayed until the ground is somewhat dry.

Composts made now will heat and be in good order for the corn crop. Muck got out in the winter will be in condition to be thus used, mixed with $\frac{1}{4}$, or $\frac{1}{3}$ its bulk of barn-yard manure.

Work in the Horticultural Departments.

Orchard and Nursery.

Planting, in some localities, can now be done, but at the North, generally, it is better to wait until next month. A young tree, put into cold soil, and exposed to drying March winds, has a hard struggle.

Shriveled Trees, that have become dried during transportation, are to be placed in a trench, and covered, root and branch, with fine, mellow earth. In about a week they will be found to have regained their original plumpness, when they may be taken out, properly pruned, and planted.

Heeling in should be done with trees as soon as they arrive, if there is to be the least delay in planting. The importance of keeping the roots of trees from drying cannot be overestimated.

Grafting may be done first on the cherry, and later on the plum. Apples and pears do better if left until the buds commence to start.

Cherry Stones, for stocks, start very early; plant as soon as the frost is out of the ground.

Stocks budded last year are to be headed back.

Evergreen Seeds.—Many inquire about raising evergreens from seed, and some complain of failure. It is useless to look for success unless some provision is made for shading the young plants. On a small scale, the following plan, suggested by Meehan, is said to work well. "A common board frame is placed over a carefully-prepared bed of light mould, and covered with shaded, hot-bed sash. Under each corner of the frame is placed a prop, raising the bottom about three inches above the surface of the ground. The advantages of this contrivance will at once be appreciated when we consider that the most essential conditions in raising evergreen seedlings are a moist atmosphere, protection from the direct rays of the sun, and, at the same time, a free circulation of air through the plants."

Fruit Garden.

Strawberries may be set as soon as the ground can be worked. Take the country through, and the Wilson will be found to be the favorite; there are many better varieties, but this is the most generally reliable. Set the plants eighteen inches apart, in rows two feet apart; keep the ground clean, remove all runners and blossom buds, and next spring there will be a good crop.

Blackberries and Raspberries are best set in autumn. Spring planting should be done as early as the season will admit. Cut the canes down to the surface of the soil. Blackberries are usually put in rows eight feet apart, and raspberries from four to six feet, according to the variety.

Grape Vines.—Prune those that were not attended to last autumn as soon as the frost is out of them. Keep young vines to a single cane, or two

canes, until good strong ones, half an inch in diameter, are secured as the basis of the vine.

Current Cuttings should have been put out last fall, but they will do fairly if set now. Pack the earth well about their lower ends.

Current and Gooseberry bushes start early, and should be transplanted as soon as practicable. Prune those that need it. See article on page 96.

Kitchen Garden.

Preparation and forwarding are the order here. Every one likes to be just a little ahead of his neighbors with early crops, and if one markets his produce, it is well known that a few days in earliness makes a great difference in the receipts.

Hot-beds are of great use in getting early seedlings, and there is scarcely any subject concerning which we have more letters of inquiry. The requisites for making a hot-bed are boards, glazed sashes, manure in a state of active fermentation, and a supply of light, rich soil. The old way of making a manure stack on top of the ground, and putting a frame over it, is well-nigh abandoned. It is more economical of manure and other materials to make an excavation. All the operations depend upon the size of the sashes. Six feet by three is the regular size, but any other will do. Select a well-drained place, facing to the south; and sheltered by a fence, building, or hedge, from prevailing cold winds; make an excavation two feet deep, of a width and length to accommodate the sash. Drive down stakes, and board up the pit, having the boards at the rear 18 inches, and those at the front 12 inches above the surface. The manure to be used should be in a state of active fermentation—a condition which may be secured by turning over stable manure two or three times, at intervals of a few days, according to the temperature, watering it if it becomes dry. A good rule is to form the manure in a compact, conical heap, and when it "smokes," turn it over. Fill the trench with fermenting manure, pack or tread it rather firmly, cover it with six inches of light, rich soil, and put the sashes in place. Put a thermometer in the soil, and when the heat declines from 100°, the sowing may be done. Sow Tomatoes, Egg Plant, Peppers, Early Cabbages, etc., in rows four inches apart. The soil covering the seeds must be both rich and light. Where plants are forwarded to the best advantage, a milder bed is in readiness, to which the plants are transplanted, when large enough to handle. For the management of the hot-bed, after the plants are up, see article on page 99.

Cold Frames, properly arranged, are nearly as quick as hot-beds. Place a frame covered with sash over well-prepared soil. Let it be well exposed to the sun during the day, but before its heat declines in the afternoon, cover the sash with mats. In this way, a patch of warm soil will be secured, in which seeds will germinate rapidly. Airing and other care must be observed, as for hot beds.

Preparation of the soil must be pushed as fast as its condition will allow. Use an abundance of manure, and spade or plow deeply.

Sods are most admirable for hot-bed work. Lay a good bit of pasture sod, grass side down, and cut it into pieces three inches square. Plant in the soil of these pieces seeds of such plants as do not bear transplanting kindly—cucumbers, squashes, and the whole of that family, corn, and even early potatoes. Put these sods in the hot bed, or cold frame; the young plants will fairly revel in the fresh earth, and at transplanting time the sod can be placed out without disturbance of the roots.

Window Boxes are to be commended to those who operate on a small scale. A box four inches deep, filled with light, rich soil, and placed in a sunny kitchen window, will afford early plants for the family garden. Have a similar box in reserve for the young plants, when they need transplanting.

Cabbages and Cauliflowers that have been wintered over in cold frames may now be fully exposed.

Roots.—Dig parsnips and salsify before any growth commences.

Asparagus and Rhubarb Beds, that have been covered during the winter, may have the coarse manure removed, and the finer portions forked in.

Peas.—Sow for early crop, putting the seed at least three or four inches deep. Try the dwarfs.

Potatoes.—Plant early sorts; it is best to have some litter at hand, to draw over in case of frost.

Onions.—Potato and top onions, as well as sets, are to be put in as soon as the soil can be worked. Plant 4 or 5 inches apart, in rows a foot distant.

Seed Raising.—All roots saved to produce seed should be set out early. In warm and dry soils, this may be done this month. Soil may be drawn towards them, to protect them from frosts, which is to be removed after danger is over.

Hardy Vegetables include carrots, beets, spinach, salsify, onions, leeks, early turnips, etc.; these may be sown for the first crop whenever the soil and season will allow. Sow in rows fifteen inches apart. Cress and lettuce may be put twelve inches apart. Radishes may be sown broadcast with beets, etc., or have a bed by themselves.

Flower Garden and Lawn.

Roads and Walks need thorough work. Drainage is essential, and solidity should be secured by making a good bed of stones to receive the gravel.

Lawns are mostly failures in this country for want of good work beneath the surface. The drainage being secured, the soil should be sufficiently fertile to sustain a verdure for years. If one kind of seed only is sown, use June Grass, or Red Top. Henderson recommends the following mixture: 12 quarts Rhode Island Bent Grass, 4 quarts Creeping Bent Grass, 10 quarts Red Top, 3 quarts sweet-scented Vernal Grass, 2 quarts Kentucky Blue (June) Grass, 1 quart White Clover=1 Bushel; and from 2 to 5 bushels to the acre, according to the soil, using more for a poor than for a rich one.

Trees.—The deciduous ones may be planted whenever it will do to plant fruit trees; give the same care as indicated for fruit trees under Orchard.

Shrubs.—Transplant the hardy kinds. Let those which were covered for the winter retain their protection until the weather becomes established.

Perennials that have been in place for three or four years will need to be lifted, and after being properly divided, reset. If there is a surplus, do not throw them away, but give to the neighbors. If nobody at hand wishes the plants, heel them in in a spare corner until some needy one comes along.

Annuals may be sown—the hardy ones—in the open ground, but the tender kinds should be put in hot-beds, frames, or boxes, as directed under Kitchen Garden. Seed-men's catalogues usually designate the hardy and the tender varieties.

Green-house and Window Plants.

Propagation for a supply of plants to use for bedding purposes can now go on rapidly. Where there is a green-house and a gardener, no instructions are needed, but in the absence of these,

Saucer Propagation is the great resource of the amateur. A shallow dish of sand, always kept wet—in the condition of thin mud—allows of the rapid multiplication of most plants. We published this some years ago, and several have complained of failure. We have tried it with things of the most diverse nature, and know that it will succeed if the cuttings are sufficiently succulent, the sand is kept thoroughly wet, and the whole exposed to full light. As soon as the plants make root, they must be potted in light and rich soil.

Camellias bear all needed pruning. The only time the camellia can be forced is when it is making its growth. Rapid growth and early formed buds will give early flowers next autumn.

Plants in Cellars are to be brought forward according to the season. Exposure to light, water, and heat, will soon start them into growth.

Insects will increase with the season. Prevention by fumigation is better than cure. Make a smoke of tobacco in the houses at least twice a week.

AMERICAN AGRICULTURIST.

ORANGE JUDD & Co., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies: Four to nine copies, \$1.25 each: Ten to nineteen copies, \$1.20 each: Twenty copies and upwards, \$1 each. Papers are addressed to each name.

MARCH ON!

MARCH is an excellent month for going forward with the premium lists. Many thousands of these clubs are in progress all over the continent, and beyond, and one or more instalments of names have already come in. These may all be filled during MARCH, and the premiums obtained. So also may thousands of new clubs be started and quickly filled. Our premiums named in the next column are splendid articles, worth working hard for, yet many get them with very little work or trouble. Very many have earned from one to five dollars an hour for all their time actually spent in canvassing. A clergyman brought us on Thursday a list of ninety-six subscribers, gathered in his country village parish since Monday morning, and took home the \$80 Cyclopaedia, which was just what his library needed. . . . A little country school-boy obtained a \$12 Worcester Dictionary in two days of Holiday Week, by obtaining nineteen subscribers. He will make his way in the world, and so will a good many others of these active boys who exercise their business tact and cultivate their talents for persuading, while gathering up these premium lists. It would be a good business exercise and a development of tact, even were there no pecuniary reward for it. One of the most successful newspaper Publishers in New York, once a farmer boy, says he learned the secret of his success and acquired the mental and business training that has made him successful, by canvassing for subscribers to a newspaper as a means of paying his way at school. It would be a useful exercise for every boy in the country to take a little practice in the kind of business exercise required to tell the good qualities of a newspaper, magazine, or book, and show how much one subscribing for and reading it would be benefited. . . . And it would do the Girls good to cultivate a little of the same business talent. Many girls, some of them quite young, are the happy possessors of a pair of fowls, a lot of flower seeds, a set of spoons for mother's table, a dictionary, etc., etc., received from this office for lists of subscribers they have themselves gathered. . . . Hundreds of acres of grass will be cut next season with mowers secured by a few days' time spent in getting up subscription lists. Had we space, we could go through the whole table in the next column, and tell interesting incidents concerning the various articles—how they have been obtained by those who desired them, without money and with no real loss of time. Those ladies who are earning from \$300 to \$2,500 each, in canvassing for premiums and selling them this year, don't permit us to publish their names. They are doing a good work for themselves, and for the sluggish people they are getting to read and think. . . . Well, we would like to stir up a few thousand more to go and do likewise. There ought to be one in every neighborhood, at every Post-office, who will raise a larger or smaller premium list. We know it can be done at every Post-office. Suppose, Reader, that you attend to the work in your neighborhood. No matter if some one has made up a list, there are plenty more people who need the paper, and would take it if it were properly shown. Pick out some article in the table, a small one first, perhaps, and by the time you get names enough for that, you will be likely to choose a larger article instead, and get it. So it has worked in hundreds of instances. This month, people are waking up from the sleep of winter, and casting about for the summer work. The Agriculturist will give them many hints and suggestions that will put them on the road to better field crops, better garden plots, finer flowers, and better house-keeping. Get them to try it this year; you will receive their future thanks, and your present reward from the Publishers in the premium article you may be able to call for. Try it this first week in March. MARCH ON!

[In this table are given the regular cash prices of each article, and the number of subscribers required at \$1.50 a year, to get it free, also at the lowest club rate of \$1 a year. For full descriptions of the articles see extra sheets, sent free.]

Table of Premiums and Terms, For Volume 28—(1869). Open to all—No Competition.

Table with columns: No., Names of Premium Articles, Price of Premiums, and Number of Subscribers required at \$1.50 and \$1. Items include various agricultural tools, seeds, and books.

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-two Premiums, Nos. 29, 30, 31, 61, 62, 63, 61, and 76 to 100 inclusive, will each be delivered FREE of all charges, by mail or express, (at the Post-office or express office nearest recipient), to any place in the United States or Territories. —The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance specified.

Read and carefully Note the following: (a) Get subscribers anywhere; all sent by one person count together, though from one or a dozen different Post-offices. But. . . (b) Say with each name or list of names sent, that it is for a premium list, and we will so record it. . . (c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. Any time, from one to three months, will be allowed to fill up your list as large as you may desire. The premium will be paid whenever you call for it. . . (d) Send the exact money with each list of names, so that there

may be no confusion of money accounts. . . (e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer the premiums. . . (f) Specimen Numbers, Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, for every extra copy of the paper costs, with the 2c. prepaid postage, about 12 cents. . . (g) Remit money in Checks on New York Banks or Bankers payable to order of Orange Judd & Co., or send Post-Office Money Orders. If neither of these is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

If from any Cause one fails to get the larger premium desired, the names can be used for a smaller one.

A Full Description of the Premiums is given on an extra sheet; a copy will be sent free to every one desiring it. For New Premium 106, see page 32, January No. We have only room here for the following:

No. 42—Clothes-Wringing Machine. —A very useful, time-saving, strength-saving, clothes-saving implement, that should be in every family. The wringing of clothes by hand is hard upon the hands, arms, and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the garments.

Nos. 76 to 81—Volumes of the American Agriculturist (Unbound). —These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-seventh Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are put up in clean numbers, with full Index to each volume. —They are profusely illustrated, the Engravings used in them having alone cost about \$40,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from 16 to 27.

Nos. 82 to 87—Bound Volumes of Agriculturist. —These are the same as Nos. 76 to 81 above, but are neatly bound in uniform style, and cost us more for the binding and postage. Sent post-paid.

Nos. 88 to 99—GOOD LIBRARIES. —In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any of the premiums 88 to 99 may select any books desired from the list on 3d cover page, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post-Office, or Express office, as we may find it most convenient to send them.

No. 100—General Book Premium: Any one not desiring the specific Book premiums, 88 to 99, may select Books from list on cover, to the amount of 10 cents' worth for each subscriber sent at \$1; or 20 cents for each name sent at the (ten) club price of \$1.30 each; or 60 cents' worth for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

A Few Dollars' worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to make their hearts help their hands. Any good book will, in the end, be of far more value to a youth than to have an extra acre of land on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres than he would off from 50 acres without the mental ability which reading will give him. Far better to sell the acre of land, than do without the books. Several good books are announced in the Advertising columns, and in the list on the 3d cover page.

No. 106—Pocket Rifle.—(Breech Loading).—A full description of this beautiful implement, with illustrations, was given on page 32, of Jan. No. No one who enjoys shooting, or who has occasion to carry a light but effective weapon in traveling or while at work, will regret the trouble required to gather the 24 (or 18) subscribers required to secure this weapon free. If any one does not care for the mahogany case, we will present the weapon all complete, with extension breech and 100 cartridges, on receipt of 18 subscribers for 1869 at \$1.50 each, all packed in a strong pasteboard box, neatly papered,

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for the month ending Feb. 15, 1869, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

Table with columns: RECEIPTS, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 26 days this month and 26 days last month.

Table with columns: SALES, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 26 days this month and 26 days last month.

2. Comparison with same period of this time last year.

Table with columns: RECEIPTS, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 26 days 1868 and 26 days 1869.

Table with columns: SALES, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 26 days 1868 and 26 days 1869.

3. Exports from New York, Jan. 1 to Feb. 15:

Table with columns: Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 1868 and 1869.

4. Stock of grain in store at New York:

Table with columns: Wheat, Corn, Rye, Barley, Oats, Mill. Rows for months from Feb. 10 to Dec. 14.

CURRENT WHOLESALE PRICES.

Table with columns: PRICE OF GOLD, FLOUR, WHEAT, CORN, RYE, BARLEY, OATS, etc. Rows for various commodities and their prices.

Gold has been as high as 136 1/2, but closes tamely at 135 1/2. There has been more inquiry for the leading kinds of Breadstuffs for home use, shipment, and on speculative account—in several instances at advanced prices, though the market closes dull, and slightly in favor of purchasers.

regular business. All sellers agreed unhesitatingly to the conditions, and the sale was positive and unexceptionable in every particular. The terms were "cash within 30 days, for all sums less than \$3,000; for all larger amounts, cash in 30 days, or approved indorsed paper at not over 90 days, with interest added from date of sale. Interest at 10 per cent per annum allowed on all amounts paid before the expiration of 90 days."

New York Live Stock Markets.

Table with columns: WEEK ENDING, Beaves, Cows, Calves, Sheep, Swine, Total. Rows for Jan 15th, Feb 1st, Feb 8th, Feb 15th.

Table with columns: Total in 5 Weeks, do. for prev. 4 Weeks. Rows for 27,724 and 26,790.

Table with columns: Average per Week, do. do. last Month, do. do. prev's Month, Average per Week, do. do. 1867, do. do. 1868, do. do. 1864, Total in 1868, Total in 1867, Total in 1866, Total in 1865, Total in 1864.

There has been very little improvement in the cattle for sale this month over those of last month. But few really desirable lots were in market on any one day, and few droves run even enough in quality to sell in a "bunch" at one price.

The weather has been extremely mild for midwinter, and butchers bought in small lots, just to suit immediate demand. There have been a few pair of choice steers on sale each week, fully equal in fatness to the "Christmas stock," and were sold by private sale, a little above the highest prices given in our list.

The following list gives the range of prices, average price, and figures at which the largest lots were sold: Jan. 15th ranged 8 @ 17 1/2c. Av. 15c. Largest sales 14 @ 16 do. 25th do. 10 @ 17 1/2c. do. 13c. do. 14 @ 16 do. Feb. 1st do. 10 @ 17 1/2c. do. 13 1/2c. do. 13 1/2 @ 16 do. 8th do. 10 @ 17 1/2c. do. 15c. do. do. 14 @ 16 do. 15th do. 10 @ 17 c. do. 14 1/2c. do. do. 14 @ 16

The season of Lent brings a dull trade for meats of all kinds. For the past month, prices have been quite even, and the market steady. With the poorer grades, sales were dull, but good steers have quite held their own. The extreme low price during the week ending January 18th was for a few lots of inferior stock. The highest price on our list, 17 1/2c., may be considered the very top of the market, only the very best of each drove reaching that figure on the scales at 60 lbs. net to the cwt.

Milk Cows have been a little more in demand, and really good cows sell quickly. The prices paid have been about the same as last month. The highest paid this month for a "fancy" cow was \$110; the lowest for a poor one, \$60. Stock-men are asking \$80 @ \$90 for good cows, and find steady sales. Half-dry cows of milkmen drag slowly on the market; still there is a demand for good milkers at prices given.

Veal Calves have been quite plenty, and the market rather dull. The continued warm weather made dealers in Western "hog-dressed" calves anxious to get rid of their lots, and prices declined 1c. or more per pound for this sort. A comparative decline ran through the live calf market, and trade was dull. Western "hog-dressed" sell at 14c. @ 18c. per pound. A few extra fat, and very nice, brought 20c. Live calves, of fair quality, bring 12c. @ 12 1/2c., live weight. Sheep and Lambs have been plenty, and a little improved in quality. Sales have been a little more steady, and rates have advanced about 1/2c. @ 1c. per pound over the prices paid last month.

Prices range for good from 7c. @ 7 1/2c. per pound, and extra as high as 9c., while common to poor sell for 5c. @ 6c. per pound. Swine.—There has been a marked falling off in arrivals. The market has been steady, but not strong, and prices a little advanced. But few sales are made on foot, packers preferring to buy the dressed carcasses. On foot, prices run 11 1/2c. @ 11 3/4c. per pound, live weight. City dressed, 14 1/2c. @ 14 3/4c., and Western dressed, 14c. @ 14 1/2c. Stock-men formerly engaged in selling cattle at Hudson City now have their offices at Communipaw. A difference between the managers of the Erie R. R. and cattle men is the cause of the change, and hereafter such stock from the west as formerly reached here by the Erie R. R. will be shipped from Pittsburgh, via the Pennsylvania and New Jersey Central Railroads to Communipaw.

The Great White Ox.—The readers of the Agriculturist will remember the great ox, "Pride of Livingston," of which we gave a portrait at the time of

his exhibition at the Sanitary Fair, in New York, in 1864. At that time he weighed 3,602 pounds, as certified by respectable persons under oath. He was sold for \$1,000, and became the property of a gentleman in the State of Vermont, who named him "General Grant," and presented him to Mr. Lincoln, on his re-election in November. Mr. Lincoln gave him to the Sanitary Fair at Boston. Here he earned \$2,000, and sold for \$2,000 in a raffle—the winner selling him to his late owner for \$850. He was also shown at the Sanitary Fairs of Chicago and Philadelphia, in 1865, and in all his exhibitions and sales, earned more than \$12,000 for the sick and wounded soldiers. He has, besides, visited numerous State and County Fairs, and been carried about in torchlight processions, and exhibited in other ways. The ox has been given to be roasted for the Invalid Soldiers, on the 4th of March. As beef, he is not worth so much as he was in 1864, but he is still a very handsome, fat ox, in excellent health, active, clear eyed, and fresh skinned as possible. He measures from base of horns to root of tail, 8 feet, 9 inches; in girth, 11 feet, 2 inches; in height, 5 feet, 10 inches; in width, through the hips, 3 feet, 11 inches; perpendicularly, through shoulder and brisket, 4 feet, 8 inches; and the brisket is 11 inches thick. The meat will be cut from the bones, and the skeleton given to Professor Agassiz, for the Zoological Museum at Cambridge.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Mark All Subscriptions sent in, as New or Old. How to Remit:—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of Orange Judd & Co.

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the Registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money and seal the letter in the presence of the postmaster, and take his receipt for it. Letters sent in this way to us are at our risk.

Postage.—To our published terms for the American Agriculturist, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be prepaid at the Post-office where the paper is received.

Bound Copies of Volume XXVII (1868) are now ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (16 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume, (50 cents extra if returned by mail.) Missing numbers supplied at 12c. each.

Canada Postage Stamps cannot be used or sold here. Please remit in United States or Canada money.

Our Premium Fowls.—The La Fleche and Houdans have recently arrived from Paris. The Crevecoeurs are bred direct from the imported Paris Exposition prize stock, and are all very fine. Light Brahmas are from pure stock, and only a few left. Dark Brahmas and Scbright Bantams none left. Those canvassing for these premiums should send in their orders as soon as possible.

Change of Address.—Subscribers wishing the American Agriculturist changed to a different post-office should give us a month's notice, as the wrappers are written and arranged long before the date of the paper. Get the postmaster at the place you are leaving to forward one number, and the rest will go all right from our office.

No More Anonymous Letters.—If a person is ashamed to put his name to a letter, he had

better not write. We are tired of "Subscriber" and "Constant Reader," as signed to letters. It is not considered gentlemanly to write an anonymous letter to a private individual; why should it be otherwise to an editor? We do not wish to publish names, but it is right that we should have names as a guarantee that a statement is made in good faith. Sign initials or any fancied signature to the article intended for publication, but give us the real name, as a clue to the author.

The Death of Mr. Pardee.—Mr. R. G. Pardee, well known in the horticultural world, died in New York City on February 4th, in his 57th year. Mr. P. was an enthusiastic lover of horticulture and the author of a work on the strawberry; besides he was widely known as a devoted worker in the Sunday-school cause.

Veterinary Education.—The New York Legislature could not do a better thing with the people's money than to extend such aid to the New York College of Veterinary Surgeons as it gives to other educational institutions. If they were to liberally endow it, it would be money well appropriated.

The Grape Culturist is the title of a new monthly by George Husmann, St. Louis, Mo., at \$2 a year. Mr. H. informs us by letter that copies have been sent, but they have failed to reach us. The starting of a periodical devoted exclusively to grapes and wine is an indication of the importance attached to this branch of industry. Mr. Husmann is not only an experienced grape grower and vintner, but a remarkably vigorous writer, and we look for not only an instructive journal, but one with a great deal of "snap" to it.

The Cincinnati Horticultural Society shows remarkable vitality. It will hold spring and summer exhibitions every Saturday from June 5th to July 31st, and offers most liberal premiums for such fruits, vegetables, and flowers as may be in season. The merchants of Cincinnati have taken hold of the matter, and offer liberal special premiums. The prospectus is a capital specimen of tasteful printing. The President of the Society is Capt. W. P. Anderson, and the Corresponding Secretary, C. H. Wardlow.

Palmer's "Heaven Manure."—In our December number, we published an item in respect to this. It was written by one of our editors wholly from what appeared in the Circular itself, which was sent to us from a subscriber for an opinion. That Circular, taken by itself, without any explanations, would warrant the general inferences drawn. But Mr. Palmer has called upon us and made some explanations, which put rather a different face upon the matter. He says he did not intend that Circular to go beyond the bounds of his annual route (though printed in general terms); that the \$25 (or \$15) he asks applies to those only so far aside as to require extra labor, and includes recipes, a book of 200 pages, and all necessary attention in preserving and preparing mixtures and manures of all kinds. We have no doubt that in such a work he may be of practical service, however much we may call in question his science of manures. Any man devoting his whole time to making or working manures will be able to afford aid to those who give no observation to the subject, but work haphazard. Mr. Palmer also brings us certificates from many of his neighbors and patrons for his good character as an honest Christian man, with good intentions. With these explanations and certificates, and after hearing from himself his desires and mode of operation, we very cheerfully withdraw any reflections upon his personal character, or his intention to humbug people, for we judge that he means to do right. In saying this as to his personal character and intentions, we do not necessarily endorse his manures or "science." We are perfectly willing that he should demonstrate his faith by his works.

A Grand Bazaar for Our Readers is provided in the Advertising Pages, where they can find what is for sale and by whom, and consult a great variety of establishments. We are sorry to be compelled to leave out nearly three full pages of advertisements that arrived too late. Please be on time. Probably nowhere else can one find so many reliable business announcements brought together, for our rules exclude those not known personally, unless they furnish evidence that they have the ability and intention to do what they promise. We repeat the request that those sending to our advertisers for cards or circulars, or ordering, should mention the fact of seeing the advertisement in this journal. It gives special pleasure to advertisers to know where their business notices are seen; and we like to have them learn something of the vast number of wide-awake people that see this journal, not only in every part of this continent, but also in remote lands.

The Horticulturist.—The first number of this journal under its new management has a pleasant look, as it has returned nearly to its original form of page. The contents show signs of vigor, though bearing the marks of having been hastily made up. An eminent writer said to us a few days ago that "no one ever should publish a first number, but destroy it after it was made up and begin with the second." While we do not intend to say that the first number of the Horticulturist deserves this fate, we are sure that the second will be better, when the new editor becomes used to the harness, where we hope he will have a heavy load (of subscribers) to pull.

The Currant Borer.—H. T. Prindle. The only way to "prevent" the ravages of the currant borer is to destroy the parent insect which lays the eggs. Traps of sweetened water might help. There are two borers, one the larva of a small beetle, and the other that of a small moth. Cut off and burn the infested twigs.

The American Pomological Society.—A special meeting of the Executive and Fruit Committees was held in New York on February 10th, the Hon. Marshall P. Wilder presiding. The main object of the meeting was to give the fruit catalogues a more careful revision than could be done at the annual meeting. Though we missed many whom we hoped to see present, there was an assemblage fitly representing the pomologists of the country. The gentlemen went into the work with earnestness and prosecuted it with perseverance, and their labors will relieve the annual gathering of much time-consuming work. The prompt and well-matured decisions given by those present indicated a great amount of careful observation. As the work of revision was going on, it occurred to us that people in general know but little of their indebtedness to these workers in pomology, who give years of experiment to enable them to say whether a variety is worthy or unworthy of cultivation. Fruit growers all over the country reap the benefits of these observations, which for the most part are carried on through a love for the cause rather than from any prospect of gain. Among those who took an active part in the proceedings were Wilder, Hovey, Hyde, and Manning, of Massachusetts. New York was represented by Downing, Barry, Ellwanger, Messrs. Parsons, and others; New Jersey by Perry, Fuller, and Quinn; Eastern Pennsylvania by Mitchell, Hoopes, and Mehan, and the western part of the State by Knox and Bockstoeck. Ohio found an able representative in Elliott. Saunders and Saul were present for the District of Columbia. Other names escape us at the moment, but enough have been given to show the character of the meeting.

Asparagus.—The Horticultural Annual contains an excellent article on the market and garden culture, by F. Brill, a New Jersey market gardener.

Excelsior Potatoes, from Mr. Jas. J. II. Gregory, Marblehead, Mass., were of really first quality.

Practical Floriculture.—The immediate sale of the first issue of this work rendered it necessary to print a second edition at once. In doing so some typographical errors—which any one familiar with the subject must have seen were merely mistakes of the types, and not of the author—have been corrected. It is the only work which gives a full account of the management of a commercial florist's establishment. The wants of the amateur are also kept in mind. Price by mail, \$1.50.

The New York Tribune deserves thanks for the persistence with which it advertises the *Agriculturist*, in addition to what we pay for. Some one thought the tail of a cat in a picture in our children's department too large, and accordingly wrote to the Farmers' Club (as the body most competent to judge of such subjects) upon this and other minor details of our pictures. This letter the Tribune kindly published, as it often does letters in which the *Agriculturist* is mentioned. The February number, containing the pictures alluded to, has had a remarkable sale, showing the influence of the Tribune's advertising. We return the favor by saying that the Weekly Tribune is a most admirable paper. If it would devote the columns which it facetiously heads "Agricultural" to some useful matter, well understood, it would be even a still greater marvel of excellence combined with cheapness than it now is.

The Stark Apple.—A variety under this name has recently been attracting attention at the West. We give an outline of it, with Dr. Warder's description, on another page. Since that page was printed a meeting of the Fruit Committees of the American Pomological Society was held in New York, at which specimens of

the "Stark" were presented. The pomologists pronounced them to be the Pennock, or Pennock's Red Winter, an old and but little valued sort, under a new name.

Bommer's Method.—We are rather taken to task for having said in a recent issue that we did not endorse the little book called "Bommer's Method." The writer sent for the pamphlet, made the tank, and followed the directions with great satisfaction,—no doubt greatly increasing the quantity and the quality of his manure, and he does not see why we do not endorse it all. We do heartily approve the general process, and follow the same as nearly as we conveniently can; but there are some claims and statements in the book a little extravagant, or at variance with views at present received.

Green-Houses Upon House-Tops.—A correspondent of the *Country Gentleman* suggests that the modern style of building houses allows of the ready conversion of the attic into a conservatory or greenhouse. The idea is not a new one, it having been advocated as long ago as 1861 by Mr. Samuel B. Parsons. An article on the subject, with illustrations, will be found in the *Agriculturist* for April, 1861. It is not surprising that a plan so feasible should have suggested itself to others.

The New York Fruit Growers' Club are to have a committee who are to call on all the powers that be and are to be, to enlarge the "Bureau of Agriculture" into a full Department, so as to insure greater attention to horticulture. Now we do not know what the "Bureau" of Agriculture is. There is a Department of Agriculture in Washington, and had the Club desired to know what that has in contemplation for horticulture and about its plans, the execution of which is only deferred until spring, it could easily have obtained the knowledge. Mr. Saunders, of the Department, was present when the resolution was offered, and had he been called upon, he might have shown the Club that quite all they propose is already on its way toward accomplishment.

Sundry Humbugs.—The "Gift Enterprise" business, which for some months past seemed to be on the decline, has in a measure revived again, and several of the more prominent companies are flooding the country with their circulars of "great promise," regardless of the law in the matter. Those who have seen the notices of these various firms in our Humbug articles for the past year will not, of course, trust any of them. To all persons we say, invest in no "gift lottery" or cheap jewelry enterprise whatsoever. An instance showing how successful these leeches of society sometimes are in their operations was given in the Brooklyn police reports. On January 29th, one Jonah Andrews, of Fulton Street, Brooklyn, was arrested, and, although proof was strong against him, he was let go on his promise to quit the business. He admitted to the authorities that he had made over \$100,000 at the business, most of which was invested in real estate. Young men of the country, when you feel tempted to trust the promises of such persons, remember that every cent you send them is so much encouragement to villany, and that, as a rule, you will never see the prize you send for or hear of the money again. . . . Half a dozen parties in Boston, in Williamsburg, N. Y., and elsewhere, are operating in the "dry goods" line. On the receipt of a specified sum they propose to send a certain number of yards of cloth of various kinds and patterns. And to those who are willing to act as agents for them, they will, besides allowing 15 per cent on their sales, give them twelve yards of cloth as a premium on their first sales amounting to \$6. The wise will risk no money on these schemes. The cat is well mealed over, but we see the ears, toes, tail, and the teeth sticking out. Some of them have no "cat," but are like the "Eureka Print Works"—well known to our readers as a thing not to be found except on paper. . . . E. A. Saunders is impressed with the belief that people will think him honest and that he will do as he agrees. His plan is this: To make it appear to the managers of the "Delaware State Lottery" that they owe you a prize, you are to send him \$10 in a letter dated one day previous to its being mailed. This letter he will put into the hands of the "Managers," and by a judicious system of lying obtain from them a prize-ticket which will entitle the holder to \$400 in "greenbacks." This "prize-ticket" he agrees to return to you with instructions how to get the prize! Of course none of our readers are verdant enough to be caught in such a trap. The game is altogether too ancient, Mr. S., and you will have to try something new, or go among those the *Agriculturist* does not reach. . . . "Music boxes" (a three-penny reed whistle), sold for one or more dollars each, are just now a favorite swindle adopted by swindling parties, new and old. . . . Rev. Edward H. Wilson! This swindling wolf in sheep's clothing continues to advertise. We are glad to see in the Methodist Home Journal of Philadelphia a letter from a correspondent

protesting against the admission of Wilson's advertisement in that excellent paper. Every publisher who advertises for Wilson helps to cheat his readers, unwillingly, we hope, but hardly blamelessly. We have exposed Wilson several times in the last dozen years. He purported to be a Methodist minister, and claimed to belong to the "New Haven Methodist Conference," until we published the fact that there was no such Conference known to Methodists. He then changed his tactics, studied up the "minutes," and located himself in an actual Conference, where, strange to say, none of his "brethren" knew him. He professes to be actuated solely by benevolent motives, but fails to let the press publish his recipe gratuitously, albeit we did publish it (see *Agriculturist* for July, 1859, April, 1862, and December, 1865). Like several others of his class, he is an un-hung villain, who, under an assumed name, steals the livery of Heaven to serve the devil (his own pocket) in. ... There are several others of the Wilson class before the public just now. One of the more prominent ones claims to be a woman by the name of Mrs. M. C. Leggett. She has remedies for catarrh, scrofula, and deafness, any or all of which she will send free of charge to any address. Of course, the several ingredients from which these "remedies" are compounded can only be obtained from her; and in a private letter on the back of the circular sent with the receipt, she tells you that for \$5 she will send you every article named therein, fresh and good, etc.!! That is the dodge they all have; "free of charge" means \$5, or some other sum of money, for a worthless or dangerous article, or a temporary stimulant, costing a few cents. ... Look out for "Real Estate Lotteries" of all kinds, for they are humbugs. ... The Implement Humbug every now and then turns up. "Shakes" (an appropriate name for some parts of the State he writes from) says: "There is one going the rounds this winter—a patent right cultivator and seed-sower. Town rights are sold to unsuspecting farmers for \$200 or more, they giving their notes, expecting that large profits will soon repay them. One man made twelve hundred dollars by shoving these notes in one county. I do not know of an instance where the dupe has been able to dupe enough of his neighbors to enable him to get his money back." The less a farmer has to do with these traveling patent right chaps the better. He should never buy an implement of any kind that has not been thoroughly tested.

Parsons on the Rose.—The publishers of the *Agriculturist* will shortly issue a new and mainly re-written edition of this standard work on rose culture. So great has been the progress in this branch of horticulture that, as far as varieties are concerned, a thorough revision was necessary. Much new material has been added and at the same time such matter as has become superfluous has been omitted. New illustrations have been prepared, and the whole is essentially a new work. Ready in April. Price, \$1.50.

The New York State Poultry Society premium list is now ready, and will be sent free on application. Office, 229 Broadway, New York.

New Work on Architecture.—Woodward's National Architect.—We have long sought in the various excellent works on house building for more of detail both of construction and ornamentation. The work before us supplies this want in an unusual degree. Besides giving a great number of attractive house designs, to cost, as estimated, from \$2,000 to \$30,000, with perspective views of most, front elevations, side elevations, and plans of all, the details are given with great minuteness, including the framing, mouldings, casings, newels, stair balusters, etc., etc., to the iron ornaments, vases, and crestings for the roof. Accompanying each design is a "complete set of specifications and an estimate of cost," at New York prices, to enable any one to compare and make his own estimates. The work will be valued by any one intending to build, and be very useful for country builders. It contains 20 designs of buildings, 109 plates, and 1,000 original engravings, including designs, plans, and details. It is sold by subscription, but the proprietors of the *American Agriculturist* have made arrangements with the publishers to supply the work at the subscription price—\$12.

The Department of Agriculture and the N. Y. Times.—The N. Y. Times has the following: "The *American Agriculturist* snarls at the Times for suggesting any improvement in the management of the Agricultural Department at Washington. It states, with a great deal of arrogance, that any improvements in that Department are directed by the 'Agricultural Press,' and all the 'Timeses' in the country will not hasten or retard any proposed movement, as farmers have the business in hand, and politicians have very little to say about the matter. We doubt

whether that is so. But if it be the case, it is the bounden duty of every man and woman to sign a petition praying Congress to abolish the Agricultural Department at once. We did hope that something worthy of record and advantageous to the country would be accomplished in that Department. But if the parties alluded to have got the power, the miserable inefficiency of the past will bear a small comparison to the distressed management that we may look for."—We print the above merely to put the Times on record, and let the farmers see what a paper which has an "agricultural" column really thinks of them. The Times railed at the monthly reports of the Department as being of no value. Shortly after it had quite a long article on the crops, based on the report of the Department, and largely made up with quotations from it. Either that paper was insincere in denouncing the reports, or it chooses to furnish its readers with matter of no value. If report speaks truly, one of the subordinates of the Times wishes to become Commissioner of Agriculture. The course of the paper in trying to destroy confidence in the present Commissioner looks like an effort to prepare the way for a change. It won't work.

Soft-shelled Eggs.—"J. H. L.," of Cincinnati, says his hens' eggs are nearly all soft-shelled, though the fowls have both sand and lime to run to. The lime is doubtless in a form which is distasteful, or not recognized by the hens. Give the hens powdered oyster or clam shells, finely pounded bones, or marble dust, mixed with their feed.

Gray's School and Field-Book of Botany.—"How shall I study botany?" is a question often put to us. We now have a ready answer—buy the above book, and study it faithfully. Dr. Gray has done the public good service in the preparation of this work, and Ivison, Phinney, Blakeman & Co. have presented it in a handsome style. The book consists of two portions: First, the "Lessons," which have been before the public for several years. No work, however elaborate, has so clearly and charmingly presented the structure of plants as these unpretending "Lessons." The writer, upon their first appearance, had occasion to say that "the work contained more botany than any he knew of." They are written in a spirit only possible to a mind thoroughly imbued with the subject, and in a style so plain that a child may comprehend it. A knowledge of the structure of plants and of the plan of vegetation is the groundwork of all botanical knowledge, and can nowhere be better acquired than from these lessons. Then comes the study of the classification of plants, the identification of species, their grouping into genera, families, etc. These are treated of in the second part of the volume. Gray's Manual of Botany contains descriptions of all the native plants of the Northern United States, and much of the matter in that is of but little use to the general student. The present work includes such wild plants as are most commonly met with, and, what will prove generally acceptable—the plants of the garden and green-house. Means for studying cultivated plants have heretofore been only within the reach of those having libraries, but here is a whole library of description condensed into less than 400 pages, with that clearness and conciseness which are so characteristic of its author. The work under notice will do much to popularize the study of botany, and we commend it not only to the general public but to gardeners and florists, who have now no excuse for following an incorrect nomenclature. Sent from the office of the *Agriculturist*, by mail, for the publishers' price, \$2.50.

Salt Marsh Mud.—Benjamin White, Mass.—Get out the mud, and let it dry on the shore. If it becomes easily pulverized, it may be spread at once on grass land, and will probably have a good effect,—better if put on after mowing. Whether easily crushed or not, it may be composted either with lime or yard manure with good results upon all farm crops.

Norway Oats.—Several inquirers.—As a finality we would say that we have grown an oat called Norway, and found it a good and productive grain. The position of this journal in regard to such matters is this: If we believe that those who advertise "novelties" are acting in good faith, we admit their advertisements. We do not endorse the representations made concerning the articles; nor do we admit the advertisement if we have reason to suppose that there is any "humbug" about it. Moreover, we advise no one to invest in new and untried things, unless he can afford to lose his money in case of failure. Please remember that all new plants, seeds, and the like, are on probation. If one in twenty proves better than any thing of its kind already in cultivation it is a great gain. If we were to exclude all seeds and plants until they had been generally tested and proved valuable all over the country, it would be depriving our readers of opportunities for experiment which they ought to have; indeed, few things would ever get generally tested. That

spurious "Norway oats" are in the market we do not doubt. That the "Norway" or any other oat will prove a success everywhere we do not believe. That the "Norway" has been found valuable in Vermont, Nebraska and other States, we are as well assured as we can be of any thing depending upon testimony. Touch all new things gently, and if a failure is likely to be at all embarrassing let them alone until those who can afford to do so have tried them.

New Roses.—John Saul, an acknowledged authority, describes them in the Horticultural Annual.

Climax Potato.—In December last, we gave the Early Rose as the parent of the Climax. We intended to say Early Goodrich, and thank Mr. Breece for calling our attention to the error.

George Hussmann has sold his celebrated vineyard at Hermann, Mo., and will remove to Bluffton.

There will be a Grande Exposition Universelle at Lyons, France, in 1870, which is some years too soon.

Will it freeze? is the question in France, the early spring flowers being all in bloom in January.

Hovey looks many years younger now he is no longer an editor.

Two of Arnold's new grapes have been tested. The Comocopia stood 79 and Antuchon 86 on the must scale.

A machine has been invented in England for killing cheap seeds to mix with new and dear varieties.

Camellias are having a great time this year in England. One man reports 49 blooms on a plant out of doors Jan. 11.

In England, small green-houses are heated by petroleum stoves. Here is a chance for some Yankee inventor.

English florists make a great palaver about a new Bolivian annual called *Palaver*.

The Lancaster Farmer is a new monthly, published at Lancaster, Pa., at \$1 a year.

The Chautauqua Farmer began its existence with the present year, at Dunkirk, N. Y. It is a weekly at \$1.50.

Edward Jones wonders why those who have choice grain seeds—wheat, corn, oats, etc.—do not advertise them. So do we.

The boys at Cornell University publish a paper, the Cornell Era. It looks as if some old boys had a hand in it.

The winter has been very mild in England. In January, Roses were in bloom, Horse Chestnut buds expanded, and Rhubarb fit for use in the open ground.

What's in a name? A great deal we should say when we read of *Primula Sinensis imbricata punctata elegantissima*. The poor thing lived, notwithstanding its name.

The Toronto (Canada) Weekly Globe has a horticultural department excellently conducted by D. W. Beadle, a well-known pomologist.

A man who went to Florida to buy land for a company reports that the soil might possibly be made productive if manured every twenty-four hours.

A. M. is informed that we do not treat with parties who do not give their names; also that we never decide to publish or reject articles without first seeing them.

Deitz's "Experimental Farm Journal" is a new agricultural monthly of 32 pages, octavo, in covers, issued by Geo. A. Deitz, of wheat fame, at Chambersburgh, Pa., at \$1.50 per annum.

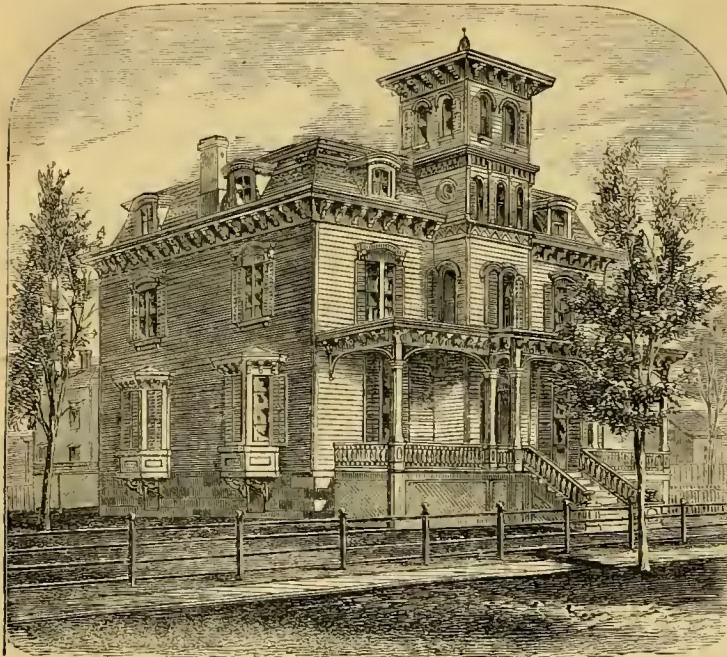
The International Horticultural Exhibition to be held at St. Petersburg on May 14th offers a large silver medal for the best collection of North American Oaks suitable for cultivation in Russia.

In Russia a water-melon is *arboor* and melon patch a *bagshta*; moreover a cucumber is a *goortsee*. Those who wish more of the nomenclature can attend the International Horticultural Congress at St. Petersburg next May.

Some half dozen Secretaries of Horticultural Societies sent notices of their winter meetings in February, about the time half our edition was mailed. How could they have been published?

A convention of American Philologists will be held at Poughkeepsie, N. Y., on the 27th of next July. Professors of Language in Universities, Colleges, Theological Seminaries, and other high schools of learning, Presidents of Colleges and other schools where Languages are taught, and amateurs and patrons of Philological studies and investigation, are invited to be present.

A prolific writer is Mr. "Ex." whose articles appear in so many agricultural journals. If a man can take our articles and satisfy his conscience by accrediting them to "Ex." he must have his conscience under good subjection. We have more respect for an open thief, like one New England paper which took an article from the *Agriculturist* and printed it double leaded, word for word, as its own. A highwayman is more respectable than a speak-thief.



A Very Complete Country House.

As one enjoys planting a tree, watching its development, and by training and pruning compelling it to grow to suit his fancy, so does another having a mechanical taste take great delight in seeing a house of his own planning "grow up" under his direction and oversight. This is especially the case when it is built by "day's work" instead of by "contract," so that he can add here, change there, and make all desired improvements upon the original plans and specifications. Such source of enjoyment and recreation has been indulged in by one of our Publishers. Having some spare land near his own residence in Flushing, he has from time to time erected one or more dwellings, which have been sold to desirable neighbors as fast as completed. The example has stimulated others, and there are now fifty-two dwellings in the neighborhood, where eight years ago there were but five. We present herewith the plans and description of one of the last two houses completed, which will probably furnish useful hints to many who are contemplating building for themselves or others, as the aim has been to introduce into these every improvement and convenience to be found in city as well as in country dwellings.

The Elevation.—A view, from the southwest corner, is shown in the engraving. As will be seen from the ground plans, the house appears nearly as well when seen from the opposite or northeast corner, where there is a glass enclosed piazza. The windows, etc., on the rear, are finished in the same style as the rest. (The too common custom is, to expend all the taste on the front, where others

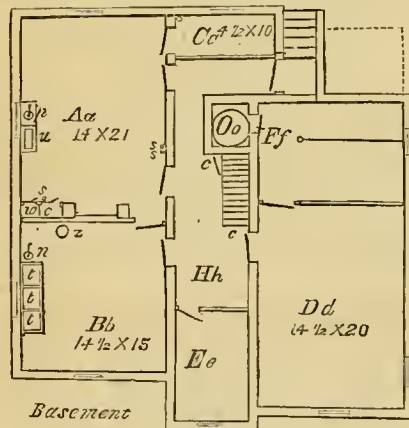


Fig. 2.—BASEMENT.—Height 8½ feet in clear. *Aa*, Kitchen, with large range not shown; *u*, Sink; *n*, Pump, with tin-lined pipe to Cistern; *w*, Dumb-waiter, with speaking-tube (*s*) to Dining-room; *s, s*, Speaking-tubes, one to Dining-room, and one to Family Bedroom (*J*); *c*, pot-closet; *Cc*, Kitchen Pantry; *Bb*, Laundry; *t, t, t*, Stationary Wash-tubs, with hot and cold water; *u*, large copper Force-pump, to bring cold water to tubs, and to force water if needed in a drouth, into the upper tank (*X*); *Z*, 45-gallon Copper Boiler, with pipes to water-back of range, in *Aa*. *Dd*, Vegetable and general cellar; *Ee*, Milk or food cellar, plastered; *Ff*, Coal cellar; *Hh*, Hall, 8 feet wide, with brick walls; *Oo*, Heater for whole house; *c*, Closet. Gas in every basement room and hall.

see it, and leave the rear very plain, if not unsightly, because seen only by the occupants. This hardly tends to beget self-respect and culture in one's self or family.)... These houses are on brick cellar walls, 5 feet above the ground, frame, filled in with brick to the roof. The siding is of 10-inch boards, 1 inch thick, grooved at the deep half-lap joints, and in the middle of each board (fig. 6.) This gives the appearance of narrow siding, with stone-joint joints, instead of clapboard lap, and there are fewer joints, and less opportunity for entrance of air and water, while the expense is little, if any, greater. The roof is Mansard or French, the top of tin, and the slant portion of blue slate, over double layers of asphaltic felt, so that the sifting in of snow, or leakage, is im-

possible. The common error of making the top portion too flat is avoided. Bay windows are provided in three rooms. These are not sufficiently appreciated generally. They add much to the size and convenience of a room; they are ornamental to the exterior, in breaking up the blank, barn-like look of the side of a house; while they are pleasant for an out-look, up and down a street, or upon the garden or pleasure grounds. The addition of a Tower does not add greatly to the expense, for, as will be seen by the plans, all the room is used, while the room at the top makes a good observatory. [From the tower of these houses there is a fine out-look over the village and bay of Flushing, upon a section of Long Island Sound where all shipping passes, and over a portion of Westchester County, with a clear view of the Palisades on the west bank of the Hudson.] Except where high winds prevail, people generally build too low. A few square feet of framing timber, siding, and plastering, \$1 or \$2 on the \$100 of total cost, is all the difference between the expense of a house with rooms 9 to 11½ feet high, and one with rooms 7 or 8 feet high. All the expenses for floors, ceiling, roof, cellar, casings, doors, etc., etc., are the same, while the higher rooms are far more healthful, and every way desirable. A wide, spacious Hall is desirable. The appearance of this to one first entering a house gives an impression of the whole building, that is not overcome. If wide, there is a feeling of size and substantial comfort, no matter how small the individual rooms may be. One does not get over the idea that there is plenty of room somewhere in the house. The several floor plans, with the descriptions underneath, sufficiently explain the general division of the rooms, etc., and we need only to speak of some special items.

The Basement (fig. 2).—The Furnace (*Oo*), the "Oriental," is a "base-burner." A large supply of coal is put into a central cylinder, whence it drops as fast as burned out below, so that a constant fire is kept up. After a long examination, this new style was selected on account of its great amount of heating surface. It is so located that all ashes and dust are confined to the coal room (*Ff*) by a tight partition. It is placed near the north side of the dwelling, because the prevailing cold winds come from that direction, and the air from all heating furnaces tends to the leeward rooms. For this reason, also, an extra pipe is taken to the north side of Room *N*. The warm air pipes for the second story are carried up in the partition walls in elliptical tin pipes, and against these are placed iron lath, made by cutting strips of sheet iron about 2¼ inches wide, and bending the edges round, to form lips for holding the mortar. ... *Ee* is a very convenient "clean cellar" or milk-room, for food, finished off with plastered walls and ceilings. ... In the Kitchen, *Aa*, the sink, *u*, is supplied with hot water cock from the boiler, *z*, and the pump, *p*, draws filtered water from a large cistern outside, through a tin-lined pipe. The Pantry, *Cc*, gives ample room. In the chimney is a "Challenge Range," from the National Stove Works, N. Y., with water-back. A "pot-closet," *c*, is placed between the range and dumb-waiter, *w*. *Bb* is finished off for a Laundry; the Boiler, *z*, is placed in this room, to heat it. The large copper force-pump, *u*, draws cold water from the cistern for the tubs, and, when needed, it forces water to the reservoir, *X*, in the Attic. A valve prevents any descent of water, so that indolent servants can not exhaust the reservoir,

but must pump from the cistern, which holds an inexhaustible supply. The stationary wash-tubs, *t, t, t*, are supplied with hot and cold water cocks, and discharge pipes. These are of inestimable value in any house; no housekeeper having once used them would do without them if possible to secure them.

First Story (fig. 3).—This is mainly described under the engraving. The Vestibule, *G*, is desirable in any house, to stop drafts of air. The doors are surmounted by half circle plates of glass, and the inner doors are glass in upper panels. The outer doors open round against the closets on either side. These closets are very convenient, instead of the Hall bat-stands. ... The wide Hall *H* appears still larger, or the house does, on account of the large double doors into the rooms on either side. The stairs turn before reaching their full height, to break the long, continuous ascent. ... The Parlor *A* is ample for all ordinary purposes, but the Library, *B*, may be a part of it when used for a large gathering, or party. ... The Butler's Pantry, *E*, has a large copper basin with plated cocks for hot and cold water, for washing Silver and China, etc., not to be sent to the kitchen, or entrusted to servants. A register in the floor, *r*, can be used when needed. It may be desirable to have the dumb-waiter come up into this room, though this would throw it further from the Range and Sink; the study has been to save steps in every possible way. As the dish closets, *c, c*, are near, it would have been as well to place the dumb-waiter in the right hand one of these, with the door of it opening into *E*. This would leave a larger closet in *C*. All these items should be arranged to save steps. Fifty times a day across a 17-foot room amounts to nearly 600 miles in the course of ten years. ... Under the rear stairs in the back Hall is a closet, *c*. Every spare nook and corner

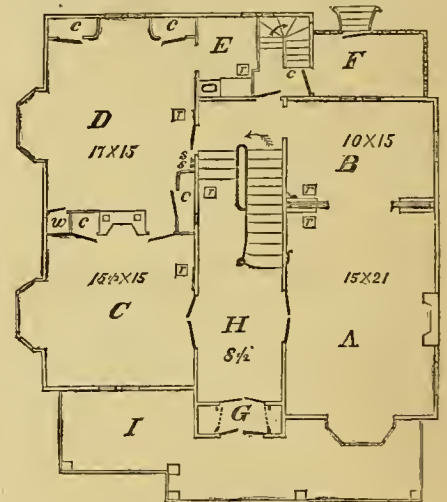


Fig. 3.—FIRST STORY.—Height 11½ feet in clear. *A*, Main Parlor, connected with smaller Parlor, or Library *B*, by ornamental ground glass sliding doors. ... *C*, Family Parlor, or Reception Room, or Sitting-room. ... *D*, Dining-room, with spacious pantries, *c, c, c*, and Dumb-waiter, *w*. ... *E*, large Butler's Pantry, having wash sink, with hot and cold water, drawers, shelf-closets, etc. ... *F*, Rear Piazza, enclosed in glass. ... *G*, Vestibule, with locked closets on each side for clothes, hats, etc., and glass inner doors into the Main Hall, *H*. Both vestibule doors have glass circle-heads. *I*, Front Piazza, 9 feet wide; *c, c, c, c, c, c, c, c*, Closets; *r, r, r, r, r, r*, Warm-air Registers; *s, s, s*, Speaking-Tubes, two to Kitchen, one to *M*. Small black markings on the walls of *A, B, C, D*, fig. 3, and *X, L, M, N, O*, fig. 4, indicate bell-pulls.

in the whole house is occupied with a closet, so that there is no waste room anywhere, while there are in all twenty-one different closets and pantries. *F* is a convenient cool piazza, which is neatly inclosed in sash.

Second Story, or CHAMBERS (fig. 4).—The engraving mainly describes this. The four wash-basins, *d, d, d, d*, are placed in the division walls in arched niches, but separated by lath and plastered walls, and rounded out in front with casings. This arrangement is convenient for the position of the basins, and one set of pipes answers for each pair. They are each supplied with hot and cold water cocks. Special care is taken to have all plumbing work above ground kept at a distance from the outside walls of the house, so that there is no danger from frost. The pipes pass up through closets along side of the chimneys, and nearly all pipes are accessible. When lead pipes pass through beams or floors, they should go tightly, or be cased round with tin, or cement containing broken glass, or else have abundant room around them for rats to pass; otherwise these pests will gnaw into the soft lead in attempting to enlarge a runway. A flooded house from this cause taught us a lesson some years ago. ... The Bath-room, *O*, is accessible to all of the cham-

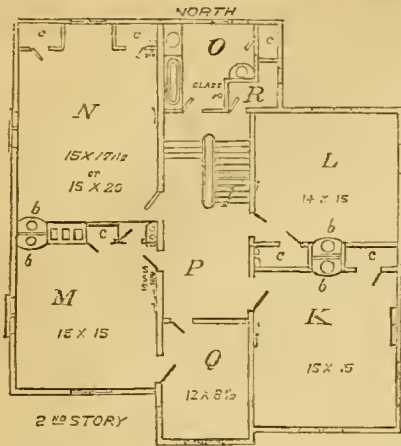


Fig. 2.—SECOND STORY.—Height 9 1/4 feet in clear. *K* and *L*, Chamber Parlors, or Bedrooms. *M*, Family Bedroom, with Speaking-Tubes to Kitchen, Dining-Room, and to bell-pull outside front Door; and bells to basement Hall, and Attic Hall for summoning and waking servants. . . . *Q*, for Dressing Room, or Bedroom, or Sewing Room, or Nurse's Room, as required. . . . *N*, Large Bedroom with closets, *c*, *c*, *c*. . . . *O*, Bath-room, with bathing-tub, marbleized iron wash-stand, water-closet, closet, register, gas, obscured ornamental glass doors, etc. *P*, Main Chamber Hall, 8 1/2 feet wide; *R*, rear stairs Hall. All chamber rooms have wash-basins (*b*, *b*, *b*, *b*) in alcoves, with Italian marble tops and wall-protectors, plated hot and cold water self-acting cocks, registers, (*r*, *r*, *r*, *r*, *r*), closets, (*c*, *c*, *c*, *c*, *c*, *c*), double wall ventilators, bells, and *T*, *M*, and *N*, have Italian Marble Mantels, with Summer pieces, having German-silver guards, etc.

bers by the ball *P*. The water-closet at the end of the bath-tub has a lead box standing under it upon the floor, so as to catch any possible drip from the pipes or valves. The seat under the close-fitting cover is hung upon hinges, and under this lead pipe is put on dishing, which serves as a broad-topped urinal, by raising the seat.

Attic, or THIRD STORY (Fig. 5).—The water tank, *X*, which holds forty-eight barrels, is supported by extra heavy timbers from the cellar up. It is surrounded with double plastered walls, but can not well freeze, as the stair-way opening all the way up supplies an abundance of warm air. This tank is neatly cased in, with trap door in the cover. The water from all the upper roof comes into it until full, when the surplus runs down into a filtering cistern, and thence into the main cistern. It will be noticed that the chimney between *S* and *T* is carried over to the outer wall, to bring the top out where it is desired in the roof for architectural effect. The warm-air registers in *S* and *T* are under control of the mistress by means of dampers in the rooms below, so that either of these rooms can be warmed only when she desires.

General Remarks—Conveniences.—It will be seen that there is no carrying water to and from the rooms. A house anywhere in the country can have an abundant supply of the best "distilled" water—the purest possible. Nature carries it up; we have only to provide for interrupting it as it comes down. Forty to fifty barrels will furnish ample supply from one rain storm to another. In case of a long drouth, the force-pump will

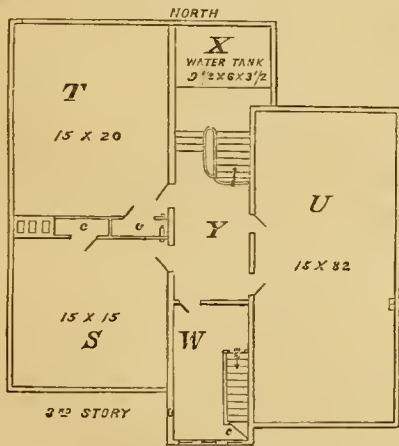


Fig. 5.—ATTIC OR THIRD STORY.—Height of ceiling, 8 feet. *S* and *T*, large Bedrooms, with closets, warm-air register from the Furnace, opened or shut off by damper in the family room below. *U*, a Play-room for children, or for drying clothes, or other purposes. Two doors are provided, so that it can be divided into two rooms with separate entrances, if ever so wanted. *S*, *T*, and *U*, have ample dormer windows, (3 in *T*, and 2 each in *S* and *T*). *Y*, upper hall, with railing and banisters. *X*, Water Tank, holding 48 barrels, filled from upper roof. *W*, Small Bedroom, or general Store-room, with closet, *c*, and stairs to a fine Tower room or Observatory.

readily fill the tank. Such a supply will often aid to put out a fire that would otherwise be destructive. The entire plumbing work of these houses, including pumps, sinks, copper boilers, tank, drains, marble wash-basin, first-class plated cocks, bath-room, etc., can be put in for not to exceed \$700 in most places, the annual interest of which is only \$50 a year. It will save twice that sum in female help and board, to say nothing of comfort, convenience, utility, and fire risk. The cost can be reduced by using brass cocks, cheaper wash-basins, etc. But low-priced plumbing, such as, poor work, thin lead, etc., is not cheap, but very dear in the long run. (These houses were plumbed by Thos. Elliot, of Flushing, which is saying enough for the character of the work. We may say the same of the mason work, by J. & P. Carroll, of College Point, the gas fitting, by Henry Lewis, and the painting by Thos. Gosling. The whole work has been under the general superintendence of Mr. John Donald, as architect and builder, who has worked on salary, and therefore had no inducement to slight a single item, were he so disposed,—which he is not. We give credit to each of these men, for they have worked for it and deserved it, as the houses will abundantly show.

BELL-PULLS in each room in the first and second stories ring below in the kitchen or basement hall. One in the bath-tub calls a servant up to bring a towel, etc., and bells extend from the family sleeping room, *M*, to the upper hall, to awaken servants, and also from the first story rooms to call them down when needed.

SPEAKING-TUBES from *M* enable the housekeeper to give directions to the Dining-room and Kitchen, without going into the hall or calling servants up. A speaking-tube also extends from the same room, *M*, opening over the bell-pull at the front door, so that any one calling at night can be conversed with, without getting up and dressing, or risking meeting a robber at the door. Fifty or sixty dollars will fit out a house like these, with neat porcelain and plated knobs, pulls, month-pieces, etc., if put into the walls while constructing them; and how many times they will repay the interest every year! Houses thus fitted up command good "help," and less of it, and save the housewife immense labor and worry.

VENTILATORS.—Two of these are placed in all rooms, one near the baseboard, the other near the ceiling, with openings up through the walls. By closing the upper one and opening the lower one when the room is cold, the warm air from the grate or register, rising to the top, forces the cold air out. *Vis versa*: when the air is hot and impure, open the top register and close the lower one, and the rarefied impure air will pass off from the upper part of the room. A dozen pairs of these registers cost less than \$40, all put in, and they will pay in health a hundred per cent per annum. Gas PIPES are carried to every room, from cellar to attic, and to two places in some rooms. Mr. Judd believes in heating houses with pure air, brought directly from outdoors through large pipes, passed over a large, warm furnace surface, not a red-hot one, and thence into the rooms, provided always that ample watery vapor be supplied to the air while passing through the furnace chambers. Hence he has put warm air registers in every principal room, including bath-room, with grates in the two principal rooms for those who specially desire them. Marble mantels, and summer fronts, with German-silver guards, are placed in *A*, *C*, *M*, *N*, *K*. The *Painting Materials* were all purchased of Mr. C. T. Reynolds in New York, that there might be no chance for poor quality, or inducement to the workmen to slight the coatings. The outer color is drab, or light gray, with darker shadings for trimmings and blinds. Inside, the Halls and *C* are walnut stipple grained; *A* is a shaded white, with bluish gray tint on portions of mouldings. *D* and *E* are oak grained, and the chambers dead white; the two sides of the doors correspond in color with the several rooms and halls.

Any suggestions in regard to the interior arrangement of these houses or otherwise will be thankfully received, and published, if of general utility, our aim being to afford every hint we can that will aid in increasing the convenience and comfort of our American homes. The cost here of a house like the above, exclusive of ground, is not far from \$12,000, all complete, with fences, drains, lattice-enclosed Privy, Grape Arbor, etc. The items of cost are about as follows: Lumber, \$1,900; Carpenter work, \$2,000; Mason work and materials, \$2,200; Roofing, \$350; Furnaces, put in, \$350; Range, \$60; Ventilators, \$30; Gas Pipes, \$120; Sashes, \$230; Ground glass for Parlors, \$60; Mantels, \$200; Grates and summer pieces, \$100; Doors, \$200; Paints and Painting, \$600; Hardware, Nails, Bells, etc., \$450; Plumbing, \$700; Blinds, \$110; Stairs, steps, banisters, \$200; Mouldings, sawing, planing, etc., \$400; Locusts for fence, basement sleepers, etc., \$50; Labor—draining, grading, digging cellar, cess-pools, etc., \$450; Cartage and freights, \$250; Insurance, Interest, and many sundries, \$750.

These houses stand on high ground on Sandford Avenue, one of the finest streets running from the village, on a deep lot, 125 feet front, about three-eighths of a

mile from the R. R. depot, whence twelve trains a day run to the city. One of them is sold to and now occupied by Robt. McKim, Esq., of the firm of McKim Brothers, Bankers, Wall St., N. Y.; and the other, just finished, will be sold on very easy terms to the first comer—at the net cost of the house and a fair price for the land. The price named in a previous item was below the cost, as many additions were subsequently made.—Prior to its sale, permission to examine the above house can be obtained by calling on John Donald, residing near by. Cars run both ways nearly every hour in the day and evening, over the Railroad to Haoter's Point, in connection with the ferry-boats from James Slip, down town, and 34th Street, up town, in New York.—By the way, the recent great improvements in the railroads, bring Flushing and vicinity practically nearer in time and comfort of travel, and more convenient to the business portions of New York, than many parts of the city itself, day or night.



Fig. 6.—As still further suggestive to those building, we append in Fig. 7 a sketch of the casings or trimmings in the rooms of the different stories, drawn a little larger than 1 inch to the foot—those of the first story being 8 1/2 inches wide. . . . Fig. 6 shows the mode of cutting the siding, referred to in the second column of page 84.

Cure for Sheep-killing Dogs.—“L. B.,” Washington Hollow, writes: “I have a valuable dog, and more valuable sheep, for which the dog has an illicit liking. Is there any cure short of bullet?”—In one instance, the following remedy was effectual. The culprit was muzzled and strapped by the neck to the necks of two stout wethers. The sheep took fright at their unusual companion, and dragged him around the pasture in all directions. When tired out, the sheep were released, and the dog sneaked home, thoroughly cured of his appetite for live mutton, and he was never known to chase sheep afterward. If this remedy fails, try the bullet.

Barley.—“W. H. W.,” Allegan Co., Mich.—The piece of land you describe—a clay loam, plowed last fall after corn—is well suited for barley, provided it is not wet. If it needs draining, better sow it to oats. You may get a fair crop of oats, but you certainly will not get a good crop of barley. The first requisite for barley is a naturally dry or drained soil. Then a rich clay loam, well cultivated for corn, fall plowed and again plowed in the spring, and sown as early as the ground is in good condition, ought to give a good crop of barley. Drill in the seed at the rate of 2 to 2 1/2 bushels per acre.

Sawdust and Ashes for Clay Land.—“M. J.,” Marion Co., Ind. The rapidity with which sawdust will decay depends somewhat upon the kind. In time, any kind makes good mould; and as an ingredient in composts, as an absorbent in stables, and as a loosener of stiff clay soils, sawdust is almost always of value. As to wood ashes, leached or not, you can not get too many, though too much may be used at once on a limited surface.

Wax Candles.—“C. B. C.,” Bloomfield, Iowa. Of course wax candles are made of wax only, but a large proportion of those sold as wax are mixtures. A white vegetable wax from China, and paraffine, together make a candle hardly to be told from one of pure wax.

Unusual Regularity on a Railroad.—During the six months past that the N. Y. & Flushing Railroad has been owned by the present proprietors, twenty-three trains have been daily run over the road, and with two unimportant exceptions, all the trains, nearly FOUR THOUSAND in number, have made regular time and due connections with the East River Ferry-boats to and from the city. May not the fact that the President of the road is an Editor have something to do with this remarkable, if not unprecedented, regularity? Editors are accustomed to being “on time.” Would it not be well for the public to place one of them at the head of each of our railroad corporations? The arrangements required to collect information from all parts of the world, to get this systematically condensed, classified, printed, and issued, often within a few minutes after its reception, and fifty to a hundred and fifty thousand copies appropriately distributed to all parts of the city and country, are quite as extensive and complicated as the machinery of our largest railroads. Yet who thinks of missing his paper at the precise moment, unless, indeed, it has been delayed by some railroad irregularity? Is it not practicable to bring the same talent for system and punctuality into railway management generally?

Renovating a Poor Field.—"J.," a Michigan farmer, writes: "I have a seventeen-acre field that is considerably run down, and I have undertaken to bring it back to its original state of fertility. I seeded it down with a large kind of red clover in 1867. Last year took off a crop of seed, 2½ bushels per acre. This spring I propose to sow on some lime and pasture the field until some time in June, and then let the clover go to seed and plow it under, and sow wheat and again seed to clover. Is my plan a good one?"—Clover sometimes does not take well immediately after clover. A better plan would have been to pasture it the first year, instead of taking off a crop of seed. Then this spring either let the clover grow until June, or pasture it and then plow it up and summer-fallow. If it is a heavy soil, plow it three times and reduce it as fine as possible. You might then expect fair wheat and a good catch of clover. If a lighter loam, once plowing with repeated harrowing and "cultivating," to keep down the weeds, will be sufficient. Apply the lime on the fallow, rather than on the grass.

Corn, Oats, Wheat, seeded with Timothy and Clover. Such is the rotation adopted by one of our correspondents in Virginia, and he adds, "Our system of farming in this section is very defective and barely self-sustaining." We supposed that corn was off in time to sow wheat. If so, it would, we think, be better to give up the oat crop and sow the corn stubble to wheat and seed down with clover. Less oats and more clover would make the land richer and give better wheat.

New Land for Settlers is every year opened up by the network of railroads which is so rapidly spreading itself over Missouri, Wisconsin, Iowa, and other comparatively new States. The settlers who rush in upon them are generally those from other Western States, who are dissatisfied with their homes, so they often leave good houses and "improvements," that is, fences, sheds, and perhaps barns, roads, and, very likely, churches and school-houses ready built. These deserted houses, if in healthy localities, are much cheaper for Eastern farmers than the wild land further west.

Raising the Price of Farms.—"J. G. S.," Worcester, Mass.—The best thing that can be done is, to apply more capital and skill to the soil. Improved husbandry, in any district, raises the price of lands quite rapidly. In Germany, since the introduction of a new system of agriculture, the population has increased, and the land risen in value 150 per cent. Germany has instituted schools for instruction in farming, in which all the specialties of agriculture, the cultivation of the vineyard, and all other branches, are taught by professors devoted to the subjects. This great painstaking to teach both the science and art of husbandry in schools has resulted in an extraordinary increase in the production, and in the wealth of the country. Better farmers will inevitably make more valuable farms.

Top-dressing Fall Wheat in the Spring.—A New Jersey subscriber of the *Agriculturist* asks if it will pay to apply bone-dust or superphosphate to winter wheat in the spring. The increase of the wheat crop alone would probably not pay for the manure, but bone-dust would benefit the land so much that in the end he would much more than get the money back. For immediate effect on the wheat, sow a mixture of Peruvian guano and superphosphate, 150 lbs. each, per acre. Sow it as early in the spring as possible. Sift the guano, to get out all the lumps; then break them up and pass them through the sifter. There should no lumps be sown larger than a marrowfat pea. If wheat brings \$2.50 per bushel, the money expended, and probably more, will be returned from the increase in the first crop, and the clover will show a great improvement; while the extra straw and clover will enable him to go on enriching the land.

What's the Price of Wool?—Wool growers will admit by and by that the persistent advocacy of the long and middle-wool breeds of sheep by the *Agriculturist* was wise. This has never been exclusive. There is great use for the fine-wool breeds, if they produce wool in those sections where sheep cannot receive much care and shelter, winter or summer, and where the distance from market is such that mutton bears a low price. Over a great part of the Union now the long-wools, especially Cotswolds and Leicesters, and middle-wools, particularly Southdowns, may be profitably raised, both for wool and mutton. The amount of combing wool used in this country is vastly in excess of the supply. The growing demand for lustrous wools, of the character of Leicester and Cotswold wool, is for the manufacture of worsted goods, lastings, delaines, beroges, Italian cloths, bunting, furniture damask and reps, cords, and

tassels, etc., etc. It is stated that 12,000,000 pounds were consumed by twenty-five manufacturing firms last year, which is an increase of 9,000,000 pounds since 1861. The short supply seriously checks the manufacture, and though fashions may change, and the demand for fine wools increase, as we hope it will, yet the great advantage which the raiser of combing wool has over the fine-wool producer, viz., that his mutton will always be in demand, will remain; and for many years we presume whatever he gets for his wool may be counted as clear gain. Common long combing wool sells at 67 cts. to 72 cts. per pound, while choice Saxony brings but 65 cts., and common to fine grades of Merino 45 cts. to 50 cts.

Potato Rot Again.—Dr. Moody G. Freeman, Marshall Co., Ill., writes: "In the fall of 1864, and at different times since, I have preserved my potatoes from the rot by applying two quarts of common salt to three bushels of potatoes, sprinkling the heap, containing the number of bushels which I wished to preserve, with a little water, and covering them with dry straw and sufficient earth to keep from freezing. My success induces me to believe that it will always preserve them when rightly applied, and even stop the progress of decay after it has commenced. Let the farmers try it."

Cheap Lands in Florida.—The reason why the land is offered so very cheap to settlers, as it appears from the experience of a friend, who says he was "Yankee enough not to be caught," is, that the railroad company mean to get their money back in transportation charges. The land cost \$2.50 per acre for wood land, and \$5 for cleared land. The charge for one barrel of produce from Cedar Keys to Fernandina, about 150 miles, was \$5.

Irrigation in Winter.—"J. M.," Groton, Ct., asks: "Have you any experience with irrigating grass lands in winter? Does it kill the grass?"—We have noticed but one instance in which the grass was injured by winter flowing, and that was near Brattleboro, Vt., and we presume this was owing to very severe freezing, and to the smothering of the grass. In most cases where the water is allowed to flow freely all winter, the ground is protected by the covering of ice, and does not freeze at all. This we judge to be safer than to have the water upon soil already frozen solid. The best results follow from abundant irrigation of all naturally dry or well-drained soils, both in summer and winter. Not only is the grass crop increased, but the subsequent hoed crops, when the sod is broken, show that the land has been permanently enriched.

Preparing Manure for Wheat.—A young Virginia farmer asks how to make a compost to put on his wheat next fall. Material on hand, manure from the stable and cow yard, some long straw, and leaves from the woods.—Make the heap ten feet wide, put a layer of the straw at the bottom, then a layer of horse manure, then a layer of leaves, and then a layer of cow manure. Then another layer of straw, horse manure, and so on as before, until the heap is of the desired height, say five or six feet. Then cover the whole with some old decomposed sods or soil. The work should be done early in the spring, when the manure is wet. And if any liquid runs from the heap, throw up the soil around the heap to absorb it. Then as soon as the heap has fermented, turn it all over and mix with it the soil that has absorbed the liquid. When done, cover with a few inches of soil as before. On some wet day during the summer turn the heap again and cover as before. In this way you will have a pile of well-rotted manure ready to spread on the soil and harrowed in after the land is plowed for wheat. If there is much straw, the manure will not be as rich as is desirable, neither will the heap ferment readily. If you could put in half a bushel of bone-dust to each ton of manure, it would be a great improvement. Scatter it on each layer of the material as you are making the heap. It will promote fermentation of the manure, and the fermentation will react on the bone-dust and decompose it, so that it will act more immediately than when sown alone. Any animal matter, such as hair, hide, wool, blood, bone sawings, etc., will be a very valuable addition to the heap. The value of a compost depends on the materials of which it is composed. The object of piling, turning, etc., is to decompose them and render them more available as food for plants.

Greasing Wagon Wheels.—"A. N.," Fort Wayne.—"What is the best article for greasing axles, and how often should it be applied?"—Mutton or beef tallow is a good article for wooden axles, and castor oil is, perhaps, the best cheap oil for iron or steel. "Little and often" is the rule for greasing. Hubs are often injured by too much oil, as it tends to loosen the spokes and boxes. Rancid castor oil can frequently be had very cheap, and it is quite as good as the best for a

lubricator. A teaspoonful of oil applied to an axle is just as efficacious as a quart, and would be much cheaper.

Bees Items.—By M. Quinby.

Loss of Bees.—B. W. Cox, Willow Gate, Ind., writes: "Within the last three weeks 75 stoads of bees have died in this county. There was plenty of honey in the gums. Would like something on the subject."—This shows that the malady spoken of last month still continues. Flowers have not yielded honey since October last, which is about the time previous reports were made. The trouble is doubtless in the honey, and as the bees could not have collected it from flowers, within the last two months, the probability is, they have robbed some hive or hives that have died earlier in the season, in consequence of a disease or poison, caused by the unusual product referred to in a former article. Nothing is more common with careless bee keepers, than robbing on some fine day in November or December. Should this be correct, it would be important that every hive without bees be immediately removed and the contents put out of the way, otherwise I fear we shall hear further disastrous reports. Yet should there be a tree in the woods, in reach of healthy bees, where poisoned honey has been left, I see no escape from the malady until such honey is used up. It would be interesting to know how far this has already spread from the starting-point; and also if some one at that place had not been experimenting with some noxious compound as a cheap food for his bees. All the facts would be thankfully received, if faithfully reported. . . . Since writing the foregoing I see in the N. Y. Tribune, further complaints of this malady, and a reply from Mrs. Ellen S. Tupper, a distinguished apiarian, who also attributes these sad effects to poisons honey; and suggests further, that the cause might be too much honey, and too few bees, for cold weather. Had she

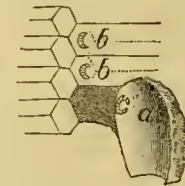


Fig. 1.

known that this malady commenced in October, while the weather was yet comparatively warm, the last suggestion would probably not have been offered. A friend, with much alarm, says: "I see they have the bee malady, also, in Maryland." This is an error in printing on page 47, *American Agriculturist*—"Clark Co., Md.," instead of Clark Co., Ind., which it should have been.

Artificial Queens.—In addition to what was said last month, relative to the dwarfing of the queen on account of size of cell, I will here introduce two cells, to illustrate the surplus room of the royal apartments. Figure 1 shows the royal larva in a cell just built, with the original worker cell, or that part entirely filled with royal jelly. The other, figure 2, shows a finished cell, with the side cut off, to exhibit the full-sized queen in a state of repose, just at maturity; showing that such queen would find ample room in a cell half the size. This figure is taken from Mr. Langstroth's work.

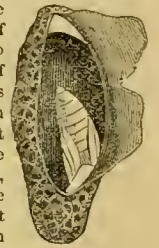


Fig. 2.

Bee Plants.—"M.," Clayton, N. Y., says: "Can you inform me which is the best plant for honey? I have tried Buckwheat, which is not as good as clover, but we cannot always obtain that. I want something that will be the most profitable. Is borage as good or better? What kind of soil is required?"—The question most frequently asked is, "Will it pay to sow any thing especially for bees?" This one asks what is best. Motherwort, Borage, and Catnip yield abundantly. The first named will last but a short time, while the other two will sometimes produce honey continuously for three months. If I should cultivate any plant exclusively for honey, it would be the catnip. When we come to the question, Will it pay? I should answer no, when land is more than \$10 per acre. To talk about cultivating plants for the honey they produce is simply a waste of breath. When we contemplate the thousands of tons of honey grown annually, even in this State, only to be "wasted on the desert air" for want of bees and skill in aiding them to collect it, it would seem like better pay to cultivate bees. In the 90,000 lbs. of honey sent to market in 1863 from a small part of the Mohawk Valley, less than one-sixth was obtained from Buckwheat. Rather than raise more honey, we can more profitably take care of what already grows spontaneously. When one field is occupied with the bees necessary to collect its sweets, take 50 or 100 stocks to another, three or four miles away; and still another, and another, until all the country is filled, and all the honey gathered. Then will be time to talk about raising more. In the new system of management, one man will take the necessary care of hundreds, with very much better chances of profit and success than ever before.

How to Raise a First-rate Crop of Potatoes.—“J. M.,” Chester Co., Pa. There are many ways of doing this. But as you only enter on the farm this spring, you will work to disadvantage. To obtain the best results, it is necessary to prepare for the crop two or three years beforehand. All that you can do this year is to select the best land on the farm, put on 400 lbs. of Peruvian guano, cultivate thoroughly, and suffer not a weed to grow. A two or three-year-old clover sod, on warm, rich, sandy loam, gives a good chance for potatoes. Do not plow until you are ready to plant. Sow the guano broadcast after plowing, and harrow it in or apply a tablespoonful in each bill, and mix it with the soil. Mark out the rows, both ways, three feet apart, and drop a fair sized potato in each hill. Start the cultivator as soon as the rows can be distinguished, and repeat every week or ten days until there is danger of disturbing the roots. We usually hill up a little, making a broad, flat hill. A tablespoonful of plaster dusted on the young plants soon after they come up will usually do good. We recommend guano because in our experience it does not increase the rot. But it is only fair to add, that we have not found even barn-yard manure, if thoroughly rotted and well mixed with the soil the fall previous, half so injurious as some people would have us suppose. If any one will put 25 loads per acre on our potato land, we will agree to plant and run the risk of the rot. But we would use some guano as well. The truth is, that it is useless to expect a large crop of potatoes, say 350 bushels per acre, without plenty of manure.

Compression of Soils by Stirring.

—“A. S. C.,” of Ohio, says: “I notice your article on the compression of soils in the January No. of the *Agriculturist*, page 9, and write to ask what such a fact teaches on subsoiling. If stirring the ground leaves it in condition to pack more closely, why is subsoiling not injurious?”—Yankee-like, we will answer the question by asking another. If stirring the soil leaves it in condition to pack more closely, why is plowing or spading not injurious? An isolated fact teaches nothing. If soils are compressed by stirring, it is absurd to say, in the face of all experience, that stirring the soil must be injurious. And so the fact we mentioned does not prove that subsoiling is either beneficial or injurious. In underdraining a clay soil, as the water is carried off by the tiles, the clay dries and contracts, and the whole soil by degrees becomes full of little fissures, that permit the water to percolate through it. Shall we say that because the soil contracts by draining, therefore draining is injurious?

Self-sown Clover.

—C. A. Winders, of Alleghany Co., N. Y., writes: “A farmer who recently moved here from Pennsylvania, says: ‘If you sow wheat in the fall, sow clover seed on the last light snow in the spring, and if the growth is large you may pasture it a little in the fall without injury. The next summer, when the clover is nicely in blossom, pasture until it is time to plow for wheat. Plow and sow wheat, and the next year you will have a good crop of clover without sowing any seed.’ He says that under this treatment the land will grow richer and richer until you will be obliged to kill the clover. We have timothy and pasture alternately, the land constantly growing better with only one expense for clover seed. Have you ever known this tried? Will not the clover seed be covered too deep to grow, and if it grows will the land improve under this severe wheat cropping?”—We think a farmer had better raise his clover seed in the ordinary way and sow it in the spring on the wheat. No sensible farmer would think of sowing clover seed in July or August, and plowing it under. Should he sow a bushel or two per acre there would probably be three or four quarts not covered so deep, but it would not germinate and from this the land would be seeded. So in plowing under a crop of clover, which had partly gone to seed, we might get a crop of clover the next year, but it is a slovenly system. To plow under clover seed worth \$3 or \$10 per bushel, or say \$300 per ton, is rather expensive manuring!

Raising Beans on a Large Scale.

—A Virginia gentleman wants to know how to raise beans on a large scale.—Take a good piece of clover or grass sod, plow it carefully, harrow, and roll. Get a drill that plants two rows at a time. The one we use makes the rows 2½ feet apart. It is better to mark the land first, as in this way the drill can be kept in the marks, and the rows will be straighter. We set the slides of the drill to drop five or six beans in hills about fifteen inches apart. If a common grain drill is used, set it so as to drop a bean about every three inches, the rows, of course, to be 2½ or 3 feet apart, as before. Drilling, we think, gives a larger yield, but dropping in hills 15 inches apart is more convenient in hoeing and in pulling the crop. We generally sow beans as soon as we are through planting corn. We drill in about three inches

deep. If the ground is mellow, the seed will all be covered. If not, it is necessary for a couple of men to follow the drill with hoes, and cover any beans that are on the surface. This completes the operation of planting. As soon as the rows can be distinguished, go through them with a light cultivator, and continue to do so as often as is necessary, which is about as often again as is generally supposed. Destroy with the hoe all weeds that cannot be reached with the cultivator. They must not be suffered to get the start. This is the great secret of success. We would advise no one to plant beans on a large scale who cannot command the necessary labor to hoe them at the right moment. Last year we turned over a heavy crop of clover in June, and planted beans immediately after the plow. They soon came up, and, except on the sandy parts of the field, there were few weeds, and no hoeing was necessary. But when there are weeds, they must be killed. We insist the more on this point from the fact that the bean crop of the United States is diminished every year more than one-half, simply from the growth of weeds. And nothing is gained by it, for the extra labor of pulling the beans is more than would have sufficed to hoe the crop, if done in season. Pulling costs about \$2.00 an acre. Curing we will treat on in a future article. For ordinary cultivation the white medium is probably the most profitable variety.

Are Potatoes Injured by Wire Worms good for Seed?

—Mr. L. I. Jackson says that last spring he plowed up a piece of old sod and planted it to potatoes. At hoeing time he was greatly elated at the prospect of a large yield; but when he came to dig them he found half the crop destroyed by wire worms. Some of the worms had gone their whole length into the potatoes. He asks: “Will it answer to plant such worm-eaten potatoes, or will it be better economy to buy new seed?” The potatoes are probably just as good for seed as if they had not been injured by the worms. It is generally best to change seed frequently.

Wheat and Clover Alternately

is the old-fashioned plan practiced when the country was new. On some of the “oak openings” of Western New York, which had been annually burnt over by the Indians, and when the land was consequently destitute of organic matter, the plan of growing clover and plowing it in every other year for wheat greatly increased the fertility of the land. The clover obtained organic matter from the atmosphere, and the soil contained abundance of mineral matter, which was developed by cultivation. In process of time, however, the land got surcharged with organic matter. This, as is well known, has a tendency to retard the ripening of the crop. Large crops of straw were grown, but the grain was light. Rust, too, often injured the wheat, and finally the midge came and the system had to be abandoned. As long as we can continue to grow large crops of clover, we may be sure that there is no lack of plant-food in the soil for wheat. And if growing clover and wheat every other year will keep the land clean, and is more profitable than a mixed system of cropping, we can see no objection to it.

Grinding Corn on the Cobs.

—J. W. Bliss, of Nebraska, wishes to know if corn and cob meal is injurious to stock. We have heard of cases, where it has been fed in very large quantities, in which it has injured the stock, but in our experience we have had no trouble with it. It is certainly better to grind cob and grain together than to feed it whole on the cob. But so far as the nutriment contained in the cob goes, it will not pay for the cost of grinding. Better shell the corn and grind it, and then feed the meal with cut hay, or bran.

Our Indian Farmer.

—We published nearly a year ago a description of the corn crib of Mr. J. T. Jones (“Ottawa Jones”), a successful farmer of Kansas. In a letter recently received he writes: “I have lived in Kansas for thirty-two years, being an Indian at first. I knew very little about farming, and in fact I know very little about it now. Having no one to teach me I did the best I could for those times, beginning with a single hoe in a hazel thicket, planting a few hills of potatoes, enlarging the area of my garden and farm with more suitable farming implements and increased power; in a few years, I made out to open a farm of more than 100 acres. All that time I knew nothing about sowing small grain, such as wheat and oats, but Mother Necessity had to be my forcible teacher. Now I can teach many white farmers who come from the East how to farm in Kansas. In addition to this knowledge, I have learned more of the art of farming in many particulars in reading your valuable paper than in any other way; yes, than from all the farmers in this country put together. I wish every farmer, every housekeeper, every gardener in our entire country had it; we might then, in a very few years, have a far better system of farming than now. Farmers

at the East come to the West and open extensive farms, and in so doing, they go to a good deal of expense; but unfortunately they go to skimming over the land for three or four years, and then some of them will begin to cry, ‘Kansas is too dry;’ some, ‘too wet;’ some give the alarm of ‘grasshoppers’ or the ‘chinchies,’ or some other lamentable cry against Kansas, and give up farming for some speculative or more lucrative business. There are, however, a few honorable exceptions to this condition of things. But as a farming community in the West, we are making poor work at farming.”

Stabling Cows and Horses together.

—“J. S.,” Chippewa, Canada. “Will the breath of cows be detrimental to horses kept in the same stable?”—It is usual to keep these animals in separate stables on large farms, more as a matter of convenience than for any other cause. But the multitude of people in villages, who keep but one or two horses, and as many cows, quite as generally keep them in adjoining stalls. If the stables are well ventilated and the urine is absorbed by muck or other deodorizers, so that there is no bad odor, the health of neither will suffer from the companionship. There is, perhaps, no foundation for the popular opinion that the breath of cows is wholesome for consumptives. Any pure air like that of a well-ventilated stable is much better for them than the close, hot, dry rooms invalids usually occupy.

Clover.

—Mrs. P., of Sand Prairie.—The best time to sow clover is probably in August. It should then be sown on well-mellowed ground, with a dressing of plaster, say 10 bushels to the acre. The kind of seed we prefer is the median, or common red. The pea-vine makes very coarse hay, but is the best for plowing under green. Sown in the spring it is best to take a quiet morning in March, when a light snow has fallen on ground that has been bare and has thawed. Clover does very well sown upon winter grain, or with spring grain, but better by itself. Suitable top-dressings for light land plowed in the spring to be sown with clover, are plaster, ashes, any fine compost, Peruvian guano, made fine and mixed with plaster and soil, or superphosphate of lime. It is worth while to roll the land after sowing. It may be done any time before the first of May, or even later.

Light vs. Heavy Soils.

—A young farmer in Ohio writes: “Would it pay better to buy 50 acres of sandy loam at \$100 per acre, or 100 acres of good clay soil at \$50 per acre?”—It depends a good deal on the crops to be raised. As a general rule, a warm, sandy loam gives the largest immediate profit; but a good clay is the more enduring. It contains a large amount of latent plant-food, which can be developed by cultivation. If you bought 50 acres of the clay land and spent \$50 an acre in underdraining, cultivating, manuring, etc., you would probably have a much more productive farm, especially for grass and wheat, than the sandy loam. But before buying, ascertain whether there is fall enough to drain it three or four feet deep; and furthermore, do not buy the 100 acres unless you have capital enough to make all needed improvements. As a rule, the high-priced farms are the cheapest, and especially so at the present time, when improvements of all kinds are very costly.

How Crops Grow.

—The knowledge of the principal facts which underlie the science and art of agriculture is much more general than it was a few years ago, but after all, it is vague and indefinite in the minds of most of even the best informed farmers. This valuable work of Prof. Johnson is intended to give exactly that important definiteness to general knowledge of agricultural principles which we need for accurate reasoning. It is impossible in such articles as we prepare for the *Agriculturist*, to go largely into the details of science, and were we to do so they would not be read except by the few. Such works, by authors of the most thorough scientific attainments, having a practical knowledge of the details of farm practice, and of the conditions of successful culture, are exactly adapted to amplify, explain, and prove these general principles which we are obliged to assert dogmatically.

What is the best Variety of Spring Wheat?

—We cannot answer this question. The China or Black Tea is a very handsome spring wheat, and yields well on good soil. The Fife is a favorite Canadian wheat, especially for rather low soils, and we believe it gives good satisfaction in the Western States, although it is not so extensively sown as the Canada Club variety. The latter ripens earlier, but does not yield as much per acre. Where the midge injures the crop, the Fife is a useful variety to sow late. Sown the first week in June, it has produced a good crop, when early sown wheat was nearly all destroyed by the midge.

Tim Bunker on Getting the Best.

"I can't afford it," said Jake Frink, as he looked into my flock of sheep, and declined to take a Cotswold ram that I offered him for \$100.

"That's a smashin' price for a sheep, Squire," said Uncle Jotham Sparrowgrass. "Never heard the like on't on the Island. A hundred dollars would buy a decent horse."

"Can you afford to keep the sheep you've got now?" I asked.

"Well, I never thought much about that," said Jake. "I keep 'em, and I guess it pays about as well as any thing."

"Your scrub sheep," said I, "probably pay you a dollar a head above the cost of keeping. Mutton and wool are all you get out of them for market, and not much of either. The Cotswolds will give you these, and a prime article of stock to sell, which will give you more profit than the flesh and wool. With this breed you get a carcass two or three times as large, and the meat will bring a higher price in market. By using a thoroughbred ram, if you do not want to raise them for stock, you will get larger lambs, and they will be ready for market in June, when the butchers will give you big prices. It pays much better to get six dollars for a lamb than three, especially if you don't have to keep him so long. That hundred dollar ram would serve your forty ewes, and if you only got a dollar a head more for the lambs, it would make a difference of forty dollars in the year's receipts from your flock. If you raised the ewe lambs and got a bigger stock to breed from, it would pay you still better. Here, in New England, where almost every farm is within an hour's ride of a good market, and where the butchers come to your door to purchase every animal you can raise, size in a calf or lamb is a very desirable quality. Lamb, as meat, retails for 35 cents a pound, and they can afford to pay well for lambs that will dress thirty or forty pounds. There is no more trouble in getting large lambs than small ones, if you only have the right stock to start with."

"That's so, Squire," said Seth Twiggs, "but them big sheep are hard on feed. The quantity of hay and turnips they'll make way with is astonishing to hay-mows and root cellars."

"Well," I replied, "what is fodder good for but to be eaten? And if you get more for feeding a hundred pounds of hay to one animal than to three, better feed one, and save the care and risk of two of them. A sheep is a machine to turn fodder into wool and mutton, and that is the best breed that will give me the most for my fodder, sold in this form. As a rule, the more a sheep eats, the more mutton and wool it makes, and the better it pays."

Jake Frink could not exactly see this, though it must be clear enough to people that have brains. The "Saleratus man" has got hold of the true doctrine in farming. "Get the best" should be hung up as a motto over every farmer's door. Here lies, mainly, the secret of success. This makes the difference between thrifty and unthrifty farmers. A man down in Shadtown last year bought a wild gander to put with one of his common geese. He started for some mongrel geese, which he knew brought the highest price in market. He fed them well, and got the goose to laying early. The first laying of eggs he set under hens, and the second the goose hatched herself, twenty-one goslings in all, which all grew up, and were sold in the fall for \$80. The feathers were sold for \$11, making \$91 as the proceeds of a single pair of

geese for the season. The high price of the mongrel geese, as well as skill in rearing, effected the result. It paid to "get the best" in this case, although he had to pay a high price for the gander. Good Rouen ducks will dress eight pounds. The common ducks of our yards will not average four. These birds get the most of their living from the ponds and brooks near the farm-house, and very little is fed out to them until they are put up for fattening. The Rouens will bring for poultry four or five dollars a pair, the others less than half that sum. If a man has to pay fifteen or twenty dollars for a trio of Rouens, he makes a better investment than to buy the common ducks at cheap prices. "Get the best" in any kind of poultry or farm stock.

There is one very good reason for doing this, which most farmers overlook. They will always have the best to sell. It is surprising to notice what a difference there is in the price of farm products, even in the small market of Hookertown. The good name of some farmers will sell any thing they have to put off. They can get their own prices, always a little above the market, because everybody knows they sell nothing but the best. If Deacon Smith drives down to Shadtown with a load of hay, he don't have to wait long on the street, before it is sold. In fact, it is generally spoke for beforehand, for the livery stable men all know the Deacon's brand. He cuts his hay early, cures it just enough, and stores it in the barn. It comes out in the best condition, and every pound is available for fodder. I don't suppose he would sell a load of mouldy hay any sooner than he would go into his neighbor's hen-roost to steal chickens. It is just so with the Deacon's butter. He keeps grade Alderneys for the most of his herd, though he has some pure-bred animals that he raises for stock. Every thing about the milk-room is kept in the neatest order, and the butter is thoroughly worked. He supplies the same families year after year, though they have to pay him about ten cents a pound above the market price. Some of the Deacon's neighbors, I am sorry to say, don't believe in his doctrine, and they find it rather hard to sell any thing except upon its own merits. Squire Bentham lives up a piece beyond the White Oaks, has a large farm, a fine white house with green blinds, good barn, and good fences, and you would think the farm always turned off the best products. But it don't. The Squire is *streaked*. He comes to our meeting and pays his pew rent, but somehow Mr. Spooner's preaching never took the meanness out of him. About a dozen years ago, he sold the parson a skin-cheese, as an offset to a part of his pew rent. He sold it for the best, and it came so near being the worst, that Mr. Spooner has never found the like of it. He never said any thing about it, but it leaked out through the servant girl that the White Oak cheese went into the swill pail. Squire Bentham will never hear the last of it. The boys got hold of it, and he rarely got out of Hookertown without being asked the price of skim-cheese. I suppose that little meanness has cost him hundreds of dollars in the way of trade. He can't sell any thing by sample where he is known. He has smelt of skim-cheese for a dozen years, and the odor will never get out of him. Josh Butler lives out on the Shadtown road a couple of miles, and used to make quite a business of bringing in lamb, mutton, and poultry, to sell around to our families. In an evil day, some disease got among Josh's sheep, that he was fattening, and one of them died.

It was too much for him to think of losing,

and the diseased meat was dressed, and sold on Hookertown street. It got out through the hired man, and Josh was in trouble every time he came to market. Mysterious "bals" were heard about the houses when he knocked at the doors, and his trade tapered down to nothing. Josh has probably repented of that a great many times, but he never will get over it. It spoiled him for Hookertown. Now it may not be always possible for a farmer to have the best articles to sell, but he can refuse to sell any thing that is bad. His reputation he should never put in the market. If he goes upon the principle of getting only the best seed and stock upon his farm, he will be quite sure, with ordinary care, to have the best to sell. The thoroughbred article costs a good deal, and it requires more capital to do business with, but it pays much better in the end. I think this kind of investment begets habits of carefulness, that tell upon all his business. He puts more money into a thoroughbred Devon or Durham, than into a scrub, and it very naturally gets carded oftener, and has better fare. Our hearts go with our treasures in farming, as in other things. One first-rate animal prepares the way for others, and the business grows in this direction, until the motto of the farm becomes, "Get the best."

Hookertown, Conn.
Jan. 13, 1893.

Yours to Command,
TIMOTHY BUNKER, Esq.

Want of Success with Wheat.

Mr. Shaw, of Indiana, who has a farm about two miles from the Ohio River, says he has not for the last five years been able to raise a paying crop of wheat. Fifteen bushels per acre was formerly considered a fair average, but now as soon as the head comes out, the Rust strikes the blade, and by the time the grain ought to be ripening, there is none in the head. It is only in a section of four or five hundred acres that the rust is so bad. These are situated on the ridges which lead to the branch of the creek. In the valley of the creek, and even on the ridges and hillsides nearer the mouth of the branch, the wheat is not affected so badly, and often escapes altogether, though the soil is neither so good nor so well tilled.

There is no known cure for rust. The great point is to get early wheat, so that it shall be so far advanced when the rust strikes it that little damage will be done. A barrel of salt per acre, sown in the fall with the wheat, has frequently a good effect on wheat liable to rust from over-luxuriance. It is curious that the wheat on the ridges should rust, while that in the valley escapes. The probability is that these ridges are full of springs and need underdraining. This can be easily ascertained by digging a few holes three feet deep. If water comes in and remains there for a week or two, the land needs draining, and no other cure for rust need be looked for until this is accomplished. The main preventives of rust are underdraining, good, clean culture, thorough pulverization of the soil, the liberal application of lime as a manure, and, in case the soil abounds in organic matter, the use of a barrel of salt per acre sown broadcast before putting in the crop. Then select an early variety for sowing and trust to Providence.

Mr. S. adds that "wheat rusts just as badly on land recently cleared as on land that has been in cultivation twenty-five years," so that it is not caused by exhaustion of the soil. But the fact that 15 bushels per acre was formerly considered a fair yield indicates that the land was never very productive. All the facts here given would seem to indicate a want of draining.

Leghorn Fowls.

The credit belongs, we believe, to American breeders for having discovered among the fowls of many colors and styles, imported direct, and through England from China, the characteristics of a pure breed, early named Brahma Pootra, now known as Light Brahmas, (the Dark Brahmas having been developed and "brought out" in England.) We claim also for our discriminating countrymen the honor of developing from heterogeneous materials an elegant and useful breed, with strong, well-marked characteristics; namely, the Leghorns. Our own earliest knowledge of this breed of fowls does not antedate ten years. One of the first flocks to which our attention was drawn belonged to Mr. J. C. Thompson, of Staten Island. They were chiefly of his own importation,

and generally had yellow legs, single combs, and white ear-lobes, but were not alike in many other particulars. As we remember them, some were white, others of various colors, like common dunghills. We remember also some flocks of all white, and which seldom threw chicks with colored plumage or double combs. Yet birds were often sold and bred as Leghorns, both white and colored, with broad rose combs, pink legs, and with bodies like Dorkings. These, in our opinion, were cross-bred birds, having Dorking or some other blood; and although rose or double combs occur in yards where careful breeding is exercised, we are inclined to pronounce against them *in toto*. Pink or white legs are of quite frequent occurrence in the yards of the very best breeders, so far as we are aware, and to throw out either class of birds would clearly be doing injustice to their other good points, for in all desirable qualities of style and beauty, as well as in usefulness, we venture to say no difference can be determined. Except for the fact that flesh-colored legs are almost regarded as the peculiar property of Dorkings, we know no reason why the yellow-legged Leghorns should be preferred.

We have gone on breeding Leghorns. Every year they have shown more style, more marks of high breeding, and their useful qualities have kept pace with their improvement in other re-

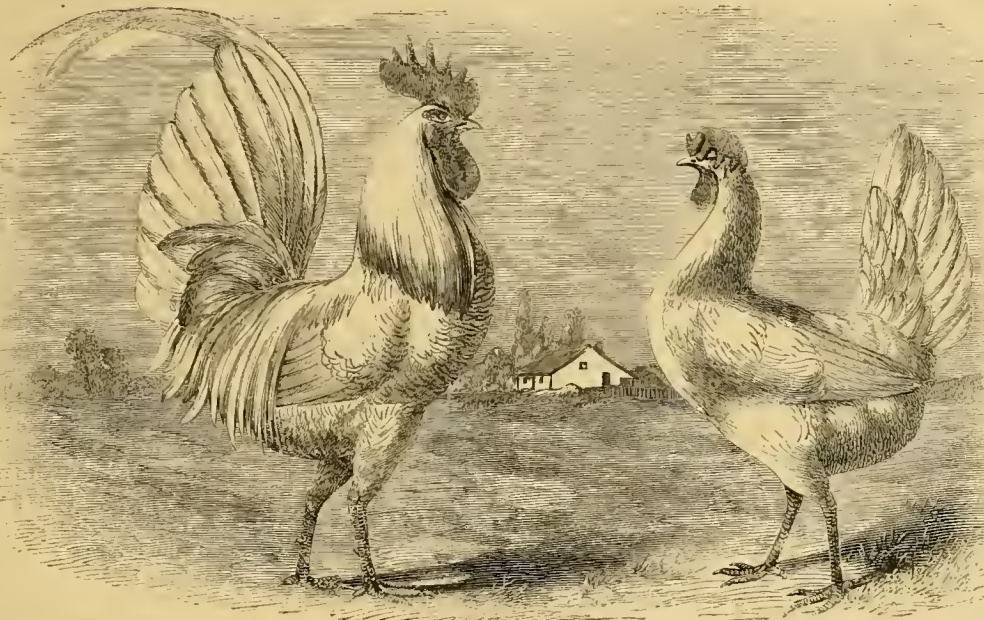
spects. Importations have been made, and are almost every year being made, but without finding any birds approaching our home-bred stock, which are now raised by perhaps one hundred fanciers. They are bred of several classes, Slaters, Dominiques, etc., but in no color do we find the *thoroughbred* characteristics of the single-combed

the throwing of white chickens is reported, but these are exceptional cases, and no true breed has been established from them, so far as we know. The rose-combed Leghorns might very appropriately be called White Hamburgs, for the whole style of the two breeds is similar. We see no reason for excluding from the Hamburg class those with double combs and white legs, provided they breed true. However, the style which we figure has our decided preference, and we hope to see it recognized as the type.

Ayrshire Cattle.

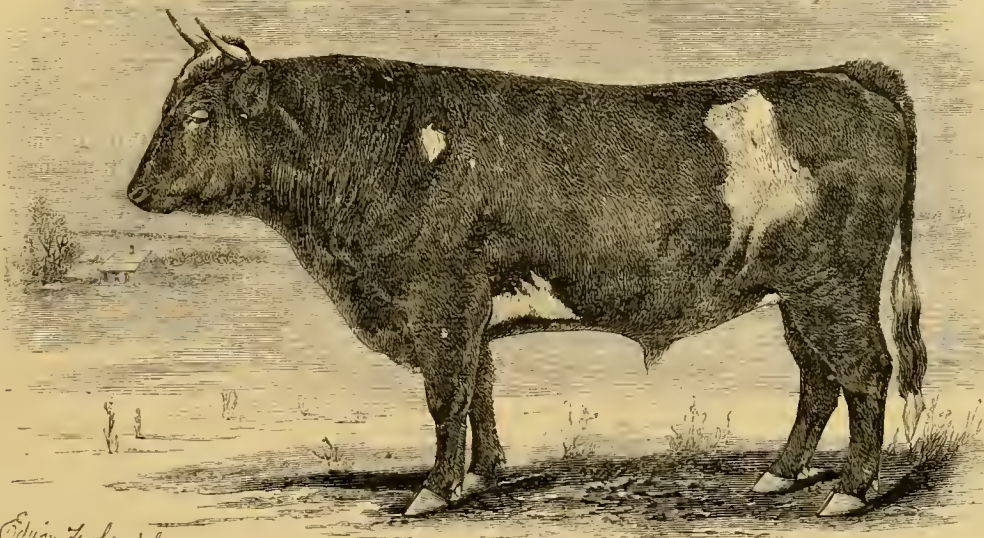
In the November number of the *Agriculturist*, we showed portraits of two cows, and discussed briefly the merits of the Ayrshire breed as milkers. One of the cows engraved was Dolly 3d, of the herd of S. M. & D. Wells, of Wethersfield, dam of the fine bull, a portrait of

which, copied from a photograph, is now exhibited. This animal was past three years old when the photograph was taken. He represents well the characteristics of his race—being fine in head, bone, and horn, having a deep body, and short, powerful legs, which are fine and flat. In color, he is deep red, and white; his skin is soft and pliable, the hair abundant, and the color of the nude spots—the interior of the ears, about the eyes, etc.—of that orange brown, which indicates a tendency in the progeny to give rich milk. Stock of his get have proved remarkably good animals, and on the whole, he seems the worthy son of an illustrious dam. The drawings we frequently see of Ayrshire bulls exhibit few, if any, points of difference between them and Short-horns. We venture to say, no breeder will mistake this for the likeness of a Durham bull. Nevertheless, the beef-points of the animal are very good, and we do not doubt that he, or steers of



AMERICAN-BRED WHITE LEGHORNS.

White. We give an engraving of a remarkably fine pair of these, the property of Mr. John Salisbury, Jr., of Nyack, N. Y. These are pure white in plumage, with yellow legs and white ear-lobes. The cock's comb is thin and very erect, his wattles delicate, but large, while the hen's comb droops. The hens are non-sitters, or at least are rarely broody, and are easily broken of the desire to sit. The eggs are above the medium size, and very white; the chickens hardy;



AYRSHIRE BULL "ALECK CRISTIE."

the flesh tolerably good. They are naturally classified with the Black Spanish, Polands, and Hamburgs, and their many good qualities lead them to be highly esteemed in comparison with the best of these justly favored breeds of fowls.

Leghorns resemble the Spanish so much that they have been called "White Spanish." We know of no proper White Spanish. Black Spanish fowls occasionally moult white, and

his get would fatten easily and profitably, where Short-horns would not. "Aleck Christie" is owned by his breeder, above named, and is the sire of several of the young bulls offered by the Publishers of the *Agriculturist* as premiums.

There is, probably, no breed of cattle, the good qualities of which are more readily engrafted upon our "native"—that is, mongrel stock,—than the Ayrshire, the best qualities of

Edwin Forbes del.

the natives being retained. Thus, Ayrshire grade cows are almost surely deep milkers. They are active grazers, and will do as well as, and probably better than, common cows, on hill pastures, and on salt hay and dry cornstalks; and they will make much better use of rich and abundant forage, giving more and richer milk, and making more cheese. Every year of careful breeding confirms the Ayrshires in desirable characteristics of their own. Though particular styles are bred for by different breeders to some extent, all aim at early maturity, quantity and quality of milk, (quantity first) and vigorous constitutions. Economy in milk production is worthy the more general attention of breeders, and should be considered and bred for.

Blanketing Horses.

It is not unusual for over-kind and very careful people, in very cold weather, to put on a heavy blanket under the harness of their horses when about to drive to town or to church. This practice, although intended as a humane one, is by no means to be recommended. While the horse is performing his work, there is no danger that he will suffer from the severest cold, or that his natural clothing will not be enough. Indeed, unless his work is very slow, perspiration will be excited, and the moisture thus arising would be retained by the blanket, instead of being immediately dissipated into the air. The consequence is, that, the moment we stop, our horse stands in the cold winds, with a wet blanket over his whole body, the effect of the evaporation of the water being to make him much colder than he would be if the blanket were then taken off. The true plan is, in cold weather, never to blanket a horse while he is taking his exercise; and never to allow him to stand a moment without blanketing with a *dry* blanket, when his exercise has ceased. So true is this, that the most careful and experienced owners and drivers of fine horses find it advantageous to remove even the heavy coating of hair that nature supplies for the winter season, so that there may be no accumulation of moisture about the skin in consequence of heating work; and to supply its place, at all times, when the animal is at rest, by ample clothing.

PIG DISPOSITION.—"Walks and Talks" writes: It is curious how qualities and even disposition are transmitted in animals. You know a thoroughbred pig is quiet and gentle. I can do anything with mine. The sow will let you take all the little pigs away from her, and let you take hold of her and turn her over in the bed. The common sow that I crossed with the Essex was a coarse, savage sort of brute. When I bought her, she was half starved, and the first thing she did when turned into the yard was to rush at a young rooster and gobble him up. And she has killed several lambs for me. I have had several litters of half Essex pigs from her, and from some cause or other she is getting to be a gentle, well-behaved sort of hog. She has now a litter of little grade Essex, and one of my neighbors was here to-day to look at them. She was lying in the yard, and I stooped down to catch one of them. As soon as he saw what I was doing, my neighbor, who is an old farmer, looked round for a stick, expecting an attack from the sow. But the little one did not start or squeal, and in fact all of them rather liked to be taken hold of and petted—though this is the first time any one has touched them. They inherit the disposition from the Essex.

Walks and Talks on the Farm—No. 63.

There seems to be a determination among farmers not to pay such high wages. The results of the past year have not been satisfactory. Farmers feel poor. We have got in the habit of spending more freely, while we now find that a dollar does not go as far as it used to. Money seems to disappear like dew. For several weeks after last harvest, wheat brought a higher price than we expected; but farmers were busy and did not thrash. When they got ready to sell, the price had declined. Then they were unwilling to sell more than was absolutely necessary to pay hired help, and to meet pressing necessities. Prices did not advance, and taxes had to be paid. Enough was sold to pay them. And thus the weeks and months went past. Farmers who had calculated upon receiving such and such an amount for their produce saw their granaries gradually get empty and the money gone, they hardly knew where. To sell 500 bushels of wheat for \$1,000 or \$1,200, and get a check for the whole at once, makes a farmer's heart glad; but to sell 50 bushels at a time, and for half a dollar a bushel less than could have been obtained months before, and then to pay the money out before it has time to get warm in one's pocket, is anything but pleasant. No wonder farmers feel poor. And yet we have no just reasons to complain. We are getting as high prices as we had a right to expect. Butter, cheese, pork, beef, beans, and barley, are as much above their normal value as wheat and wool are below. We have no cause to feel discouraged. Wages are undoubtedly too high, especially for unmarried men who get their board and washing, and have nothing to buy except clothes. Farm men with families are no better off than before the war. And it is wrong to attribute all our troubles to high wages. The principal reason why farmers are not doing as well as the advance in prices would lead us to expect, is this: the yield per acre is too small. We raise from 10 to 15 bushels of wheat per acre, instead of 25 to 30 bushels; 15 to 20 bushels of barley, instead of 35 to 40; 30 bushels of corn, instead of 60; 75 bushels of potatoes, instead of 150 or 200. Our cows, instead of yielding 150 or 200 lbs. of butter a year, do not yield over 100 lbs. Our steers, which at three years old should weigh 1,500 lbs., do not average over 1,000 lbs. at four years old.

But will the kind of farming necessary to produce such crops pay? That depends a good deal on the means employed to accomplish the result. A farmer in Iowa might send to New York for guano enough to double all his crops, but it would not pay. We must call to our aid all the knowledge that can be obtained, and then exercise a little common sense. John Johnston used Peruvian guano on his wheat last year, and says it paid. And I think all the artificial manures I have used have paid me well. But leaving these things out of the question it may safely be asserted that it does *not* pay to raise weeds; it does not pay to half-plow and half-work our land; and it certainly will not pay to plow and plant land that is a mud puddle in the spring and a brick-yard in summer.

"But if we drain our land and cultivate it more thoroughly, we shall have to employ more labor, and wages, instead of being lower, will be higher." This sounds plausible, but it is not necessarily true. Men who would not work for me last summer and autumn for \$2.50 per day, are working for me now at 75c. to \$1.00 a day, and board themselves. Underdraining can be done

at a season when other work is not pressing, and when men have little else to do. And this is also true of other kinds of work that would add greatly to the productiveness of our farms. There are very few days in the year when something cannot be found to do that ought to be done, and that it will pay to do, provided men can be found willing to work at reasonable wages. We must employ more labor on our farms, but it should be done judiciously, and so as not to increase the demand during the busy season. That this can be done, I have no sort of doubt. From the middle of March to the middle of May, men who hire out by the day have little to do. And this is the time to drain, to pile manure, to make and mend fences, to get out stones, and to prepare wood for next winter. And yet during this season men not hired by the month are idle half the time. I am well aware that many of them will not work unless they can get high wages. I have heard them talk among themselves: "Not much doing now, but as soon as planting commences there'll be work enough, and we can get two dollars a day." And they are generally right. We do little until it is time to plant potatoes; we then try to do too much: a heavy rain delays operations; we get behind, are in a hurry, and offer to pay high wages to the very ones who foresaw the result and made calculations for it. And this is not all; they feel very independent and do not perform more than half a good day's work. The remedy for this state of things is to give employment during the early spring months to all who will work at reasonable wages. Then plant only about half the usual area, and so be able to dispense with half the usual labor during the busy season. If the proper means have been used to *prepare and enrich the land*, we shall get as much produce as formerly, and our *profits* will be a great deal larger. We shall get a great deal of extra work done without spending more money; and the men will receive as much money, and be just as well off as when they received double wages half of the time and were idle the other half.

Farming will never be as profitable as it ought to be until we are able and willing to furnish men work during the whole year. By making preparations for it, as much labor may be employed in winter as in summer. In fact, I have more men at work now in the dead of winter on my farm than I sometimes have in harvest. One man is trimming the apple orchard, two are drawing stones, another has gone for a load of draining tiles, and four are digging underdrains. And I could find work for two or three more. When it is too stormy to work outdoors, the day hands stay at home, and if they are industrious men they can find something to do for themselves. The others can thrash beans, cut fodder, sort over potatoes, shell corn, and grind it; repair implements, oil harness, clean out the pig-pens, card all the cows in the stable, and give each horse an extra half hour's cleaning. Of course, work of this kind needs constant supervision. The men are not used to it, and the farmer must direct every operation, and see that it is done properly. On my farm this is the weak point. When I am writing in the house, the men are loitering in the barn. But this is no objection to the system. It only proves that a man who, for his sins, is obliged to edit a paper, cannot be as good a farmer as one of those thrice happy individuals who can devote all their time and thoughts to managing the farm.

A New Jersey farmer thinks that in advocating hoeing wheat in the spring, I have over-

looked the fact that we generally sow clover with the wheat. Not at all; I distinctly stated that we should have to give up sowing clover with winter wheat. The plan is open to that objection. "You say," he writes, "that we must have a rotation of crops to keep up the fertility of our farms, and generally speak of the course pursued in this State and others, of grass after wheat as being the best. Now, by hoeing the wheat, what becomes of the timothy seed we are so careful to sow in the fall, and the clover seed we are advised to sow so early in the spring? I don't see that hoeing wheat can ever become general, for even at the West they will yet have to come to rotation in order to keep up the land."

I do not think I ever said that a rotation of crops is necessary to *keep up the fertility* of the land. If I did, I said what is not true; give me plenty of manure and I can raise potatoes, onions, corn, grass, barley, and wheat, without rotation. There is a great advantage in a judicious rotation of crops, but there is no absolute necessity for it so far as the fertility of the soil is concerned. In fact, I could impoverish a farm sooner with a rotation of crops than without it. A few years ago, chemists had a good deal to say about the requirements of different plants, and could tell us what crops ought to follow each other. Since then, they have studied the matter more thoroughly, and I hazard little in saying that if you should go to the best agricultural chemist in this country and tell him that a certain rotation was not convenient, he would say, "Change it for one that is convenient." A chemist can give excellent reasons why barley does well after a crop of turnips that have been eaten by sheep on the land, but this is not the reason why the English farmer adopts the system. He sows barley after turnips for the same reason that we sow barley after corn, because it is more convenient than it is to sow winter wheat. That rotation of crops which will enable us to clean the land at the least expense, which gives us the most work to do during the leisure season, and the least during a busy one—in other words, the system which is most convenient,—will, as a general rule, be the best. So then, if it is desirable to hoe wheat we need not hesitate to change our rotation. Fifty years ago it was the common practice in England to sow grass and clover seed with wheat; now it is very uncommon to do so. The wheat is hoed once or twice in the spring, and as soon as it is harvested, the land is scarified and worked thoroughly in the fall, and prepared for the turnip crop the following spring. And this system has helped to make English agriculture the admiration of the world. Clover is sown with the barley crop, and wheat follows the clover.

Farmers must think for themselves, and adopt a rotation of crops suited to their soil, location, and circumstances. One thing is certain; we shall be compelled to make a more determined effort to clean our land. The weeds cheat us out of half our profits. The system best adapted to get rid of them is what we are in search of. Our climate is much more favorable for their destruction than that of England, and it may well be that we shall discover some better and cheaper method than hoeing the wheat. I am not sure that the plan I am now trying of fallowing for barley will prove to be what we want. It will certainly destroy that pest of the wheat-grower—red-root.

A gentleman in Massachusetts wants to know why I prefer Peruvian guano to other manures for potatoes. I do not think it is any better

than thoroughly rotted manure from well-fed animals. But for immediate effect it is much cheaper. The better plan is to use both. Apply the manure to the previous crop, (say of corn,) and then sow 300 lbs. of guano broadcast on the land after it is plowed in the spring for potatoes, and harrow it in. If the land is suitable and the crop is kept clean, I should expect a large yield. But if I had no manured land I should not hesitate to sow guano alone. I have seen good crops raised on very poor land, with guano only. And, in fact, I have never known Peruvian guano to fail to produce a good crop when properly applied, and the land well plowed and cultivated. If the crop is planted in hills, the guano will have a better effect if applied in the hill. But care is necessary to prevent the guano from coming in contact with the seed, or it will burn it up. If the hills are 3 feet apart, 1 oz. of guano, or about a tablespoonful, will give 300 lbs. per acre. I would mark out the rows both ways with a broad-toothed marker, and then drop a tablespoonful of guano on the spot where the seed is to be planted. Then with a hoe thoroughly incorporate it with the soil, and at the same time make the hole for the set two or three inches deep. I think we are apt to plant too shallow. Drop the set and cover with loose earth. In this way the guano will not hurt the seed, and will act more rapidly than when sown broadcast.

A young farmer in Ohio asks my advice in regard to the improvement of a stiff clay farm that formerly produced good wheat, but now fails to yield remunerative crops. He says it undoubtedly needs underdraining; that he has cut one drain through his garden, and "the effect is wonderful." But he is considerably in debt, and to spend \$50 an acre in draining is out of the question. He does not wish to sell the farm, and cannot sell a part, as there is much land in the neighborhood that can be bought for \$10 per acre. The soil, he says, seems best adapted to grass and clover, and he has thought of going into the dairy business, but lacks money to buy cows. "Now," he writes in conclusion, "the problem I wish you to solve is, how to make the farm get itself out of debt, stock itself, and pay for underdraining." Better sell and buy a cheaper farm; or work for some other farmer until money enough is saved to farm properly. It is now almost impossible to obtain an intelligent, experienced man to take charge of a farm. Such a man can command a good salary. But if, in such a case as this, the owner is an "independent American," who would rather suffer the greatest privations on his own land than work for others, and if he cannot sell, he must stay where he is and do the best he can. Pluck is to a certain extent equivalent to capital. If good land in the neighborhood sells for \$10 an acre, it will not pay to spend \$50 an acre in draining. But, in point of fact, on the majority of our farms, no such sum is required. I believe \$20 an acre would drain my farm perfectly. Some fields require more, some less. Drain those fields first that are going to be plowed. Let the others lie in grass. Take pains to get off all the surface water. Never let a drop lie on the land a day, if possible. Much can be done in this respect with the plow. The furrows should be opened at the bottom with a spade, and then a few minutes' work with a hoe will often let off more water in an hour than the sun can evaporate in a week. Where sufficient capital is at command, it is undoubtedly better to underdrain systematically and thoroughly at once, but it is nevertheless true, that a few

drains judiciously laid through the springy portions of the farm, in conjunction with surface drains, will prove very useful. In this country, as compared with England, although we have a greater rain-fall, we have fewer rainy days. When it rains here, it rains. For several months in the year, too, the rain is held as snow, and when the thaw comes, the ground being frozen, the water runs over the surface to the lowest level. I believe we can get rid of more than half the water which falls on the land by means of surface drains. The trouble generally is that we do not provide ditches deep enough into which the surface drains can be conducted.

Comparatively few people in the world do more than get a living. And it is asking a good deal of a farm to "get itself out of debt," stock itself, and furnish the money for improvements that would double or treble its value, and support a family in the meantime. It is true that thousands of farmers have accomplished such a result in this country, and what has been done can be done, but it is usually the labor of a life. To a mind rightly constituted, the improvement of land is the most pleasurable of all occupations, and we can afford to live economically for the time being, and wait patiently for the profits.

Mr. Boardman, of Ontario County, N. Y., wants to know the value for manure of a ton of clover seed straw as compared with a ton of clover hay. He says he has been reading Prof. Johnson's new book, "How Crops Grow," but cannot find the information. This is true, but as he has given us the most valuable work of the kind in the English language, we must excuse him. He gives the composition of the *ash* of clover seed, but not the percentage of nitrogen. We are pretty sure in concluding, however, that clover seed is very similar in composition to peas and beans. Furthermore it is probable that there is but little loss of nitrogen during the ripening of the seed, and consequently if a ton of clover seed hay yields 300 lbs. of seed, we may conclude that 1,700 lbs. of straw and 300 lbs. of peas, beans, or oil-cake, would make manure as valuable as a ton of ordinary clover hay. Clover seed, or peas and beans, is worth for manure about as much again per lb. as ordinary clover hay. It may be safely asserted that the straw of peas, beans, or clover, is worth three times as much for manure as wheat straw.

Mr. B. has a good wheat farm of 120 acres, and his wheat crop last year brought him \$2,400; besides this he had 800 bushels of potatoes and expects 50 bushels of clover seed. He does not raise any oats, barley, or buckwheat, and feeds out the corn from 10 acres on his farm. He has 12 acres of orchard, keeps 180 sheep, 6 head of cattle, and 4 horses. His practice is to spread manure on clover sod in winter or spring, pasture the field with sheep until the 1st of July, then plow it about 10 inches deep, cultivate thoroughly, and sow wheat Sept. 1st. As soon as the wheat is harvested, the field is plowed with a double plow a little deeper than before. Then it is rolled with a four-horse iron roller, cultivated thoroughly, and sown with *wheat again*, seeding with clover in the spring. That this plan gives good wheat on his farm, the crop of last season abundantly proves. But I fear that the system would not keep the land clean, unless the first crop was hoed. A once-plowed summer fallow, with only two months of cultivation, is not sufficient to germinate seeds of weeds. I see no other objection to the plan. It will not exhaust the soil any sooner than raising wheat after barley or oats.

Fodder Cutting at Ogden Farm.

One of the items of improved agriculture on which the operations of this establishment were originally based was the cutting of all hay, cornstalks, and other fodder, to be consumed by the stock; and the barn was purposely so constructed as to make it inconvenient to feed long fodder to animals. For some time, however, it seemed quite impossible to secure the regular cutting of the feed; for, even when a sufficient force was furnished, the labor of turning the machine for so large an amount of work was so irksome that it was impossible to get it properly performed; and the question of mechanical power became an important one. It was first contemplated to erect a large wind-mill on the barn for this purpose; but, in the absence of practical evidence that it would succeed, the attempt has not thus far been made. It was found, also, that the use of a steam engine would possibly vitiate the insurance policy on the barn and live-stock; and so recourse was finally had to the railway horse-power. A double power, used during the summer by an itinerant thrasher, has been hired for the winter and set up on the main floor of the barn. Its belt being connected with a Daniels' power hay-cutter, it is found that one heavy mule will drive even the double horse-power without undue exertion; and the amount of hay or cornstalks required for the entire foddering of about 30 head of stock is cut daily in 30 minutes. There is no difficulty whatever in securing the regular performance of the work, since the hay requires no more handling than would be necessary to deliver it in front of the stalls; and the subsequent handling of the chaff with the facilities provided is so easy that there is no excuse, and, indeed, no temptation, for its neglect. As a consequence, whatever advantage may be gained by the cutting of hay,—and so far as can now be estimated in this experiment, it is fully ten per cent of the whole,—is attained without additional labor by the use of a horse-power, hired for the winter for \$10, and the daily use of one mule for half an hour. Arrangements having been perfected for steaming the hay, after being cut, is all subjected to this process before being fed.

The Distribution of Liquid Manure.

All plant-food enters the roots of crops in solution in water. When ordinary kinds of manure are applied to the land in a solid form, considerable time is usually required for the ac-

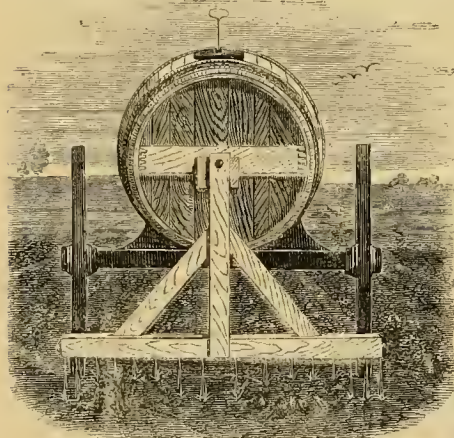


Fig. 1.—MANURE CART ON LEVEL GROUND.

tion of the natural forces of the earth and rains, air and warmth, before it is all so far part and parcel of the soil as to be assimilable by the

plant. A portion is almost immediately available, but other portions gradually become so. The contrary is true with liquid manure. When it enters the soil, a great portion of it is in a state of immediate availability, and the rest rapidly becomes so. When applied to crops whose roots already fill the soil, as to grass or grain, a portion is at once seized upon by the plants, while the rest, being absorbed by the soil, is furnished as occasion requires. This takes place on well-drained soils, most rapidly in moist seasons. The application on such land is best made just before a moderate rain, or just after one, while the soil is still full of water. The reason for this is that the large quantity of water causes a more general diffusion of the manure than would otherwise occur. The idea that manure in the liquid form is likely to be lost by leaching is erroneous. Any tolerably good soil possesses properties which arrest and render solid almost

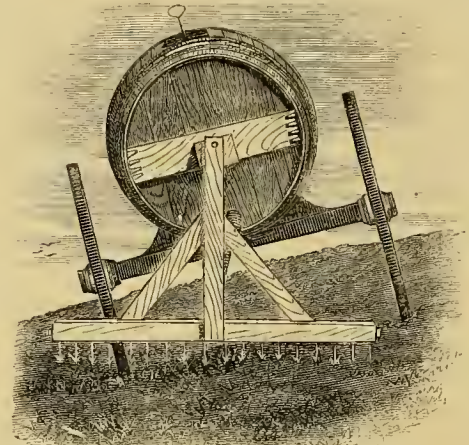


Fig. 2.—MANURE CART ON HILLSIDE.

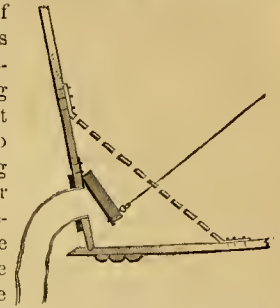
all substances in solution, having a high manurial value, like the alkalis, phosphates, and ammonia. This takes place most rapidly in that portion of the top-soil least exposed to the action of the elements. Hence it is, that rains, while they dissolve plant-food in the top soil, cannot carry it far below the surface. If, however, instead of sinking into the earth, water flows over it, great damage may be the result.

There are many ways of distributing liquid manure. It is extensively done by hand, and this is the best way for manuring cabbages, beans, and all plants growing in hills or distinct rows. On grass and grain a very even distribution may be effected from a skillfully handled bucket. A French or German farmer accustomed to it will fling his bucketful in fine spray over a half circle of 15 feet radius, and no one can tell if one part gets more than another.

For ordinary purposes, and for common people, however, a cart made for the purpose is most satisfactory. We give figures like one which we know worked very well and which is almost identically like the one engraved, except that it has a tin distributor instead of a wooden one. Tin ones are light, but hard to clean, and they often need cleaning, and soon rust out.

This cart is a pipe or hoghead set upon an axle. There is a hole in the top as it lies; and it is set so that nearly all the water will run out of a hole in the rear head. A 3-inch hole is made at this point, and a plug with a 2-inch bore inserted; or no plug need be used. In either case a canvas or leathern hose is attached over the hole or to the plug, and a valve is placed to close the opening inside of the hoghead, which is shown in both fig. 3 and fig. 4. This valve is opened by a wire passing out at the top where the driver can reach it. The hose is attached to the distributor, and is long enough to

allow its swinging from side to side, at least a foot. This part of the apparatus is easily made by taking a piece of pump tube 3 inches square, having a 2-inch bore, cutting it of the right length, plugging up the ends, and boring holes at the proper distances, more frequent towards the ends than in the middle, if of large size. Holes $\frac{1}{2}$ -inch



in diameter are about right. The distributor may be attached directly and immovably to the cart, or it may swing as shown in the engravings. When this plan is followed, a $\frac{3}{4}$ -inch bolt should be used, driven from the inside through a $\frac{3}{8}$ -inch hole. The distributor should swing very loose. It will then accommodate itself to inequalities of the surfaces, but more especially to uniform inclines, like side-hills, which it is desirable to travel across, and not up and down. Figure 1 exhibits the liquid manure cart upon level ground, giving a top-dressing to a field of beets or ruta-bagas. A few plugs might be inserted, so that only the two jets nearest over the rows of roots should flow. Figure 2 represents the same cart on a side-hill, the distributor retaining its horizontal position, whatever be the inclination. Figure 4 shows the side view and section at once, the dotted lines indicating the internal structure. There is a screen or strainer, to free the liquid from particles of straw, etc., before it enters the distributor, seen in fig. 3. As a safeguard it is also best to strain all the water through a piece of sacking placed in the opening in the top of the hoghead. Should the distributor become clogged or dirty, it is easily cleaned by knocking out the plugs and swabbing it out, clearing the

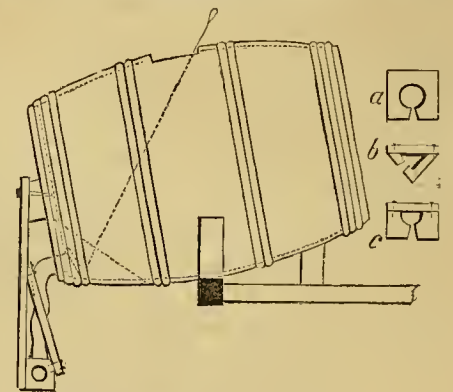


Fig. 4.—SECTION AND SIDE VIEW.

holes at the same time. In case pump tubing cannot be obtained, substitutes are easily constructed, as indicated in figure 4, a, b, and c.

Great Milkers for Butter Dairies.

It is fast coming to be understood that for the manufacture of butter simply, great milkers are not always the best cows. To say nothing of the superior butter-making qualities of Jersey cattle, the difference in butter-making capacity between different cows of any breed depends very slightly on the quantity of milk that they give and almost entirely on its quality. A cow giving ten quarts of milk per day will often make more butter than another of the same breed giving sixteen quarts; and where this is the case, if the business is exclusively, or chiefly, the manufacture of butter, the smaller

milker is much the more profitable, for the reason that the skimmed milk is usually of little value, except for the manufacture of pork, and this will not compensate for the greater amount of food that the larger milker consumes.

For butter dairies, then, it should be our aim, setting aside all other considerations, to select such animals as ample experience has shown will make the largest quantity of butter from a given amount of food. Whether the food be fed to one animal or to two is a matter of little consequence. What we want is to get the most money as the result of its consumption; and this is often attained by feeding it to a larger number of smaller milkers. In the case of thoroughbred animals, the advantage of the larger number of cows is still greater, for the reason that they give us more valuable calves.

Salt as an Article of Diet for Stock.

It would seem absurd to argue that salt is an essential ingredient in, or in connection with, the feed of live-stock. The problem is one which has its demonstration daily in the fondness of the animals for it, in their rough coats, and nibbling and sniffing appetites when deprived of it, and in the sleek condition and sharp appetites which soon come from its moderate use. The deer and the buffalo are as fond

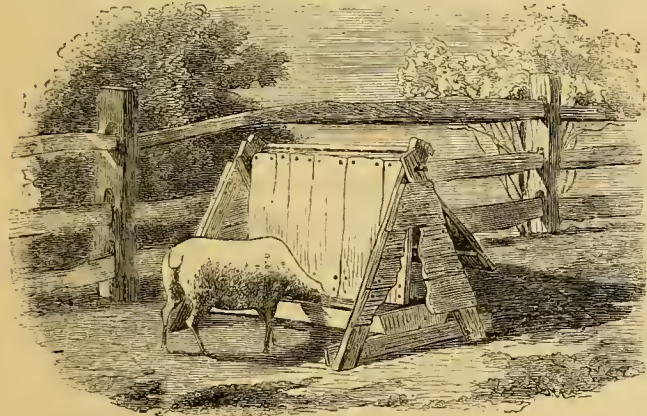


Fig. 1.—SALT-TROUGH WITH ROOF.

of salt as our domestic ruminants, and in a condition of captivity, it is as essential to their health. Cattle near the sea-board do not need salt, and though they like it, the use of it is often given up, because its benefits are not apparent, and the very knowledge of its utility may be lost in a few generations.

"How quickly your butter comes!" said an acquaintance who had stepped in to have a morning chat with the good wife of a farmer living near one of our seaside watering-places. "You must salt your cows well."—"Oh, no! we never salt them; do you salt your cows?"—"Certainly, every week."—"How do you do it?" "rub it into their backs?" was the innocent, and, from her standpoint, natural rejoinder.

When cattle and sheep are salted once a week and flat rocks with basins in them are not abundant, the next best things are little oak "dug-outs," like the one shown in fig. 2, three feet long, ten inches wide, four high, and about two deep. They will last out in the weather a long time if they are only housed in the winter, or turned bottom upwards on a rock. We give also a sketch of a salt-trough (fig. 1) for the constant supply of dry salt. A swinging roof hung in a frame, which supports the trough a little above the ground, protects the salt from the weather, and animals will quickly learn to push the roof to one side and get at the salt, and

when they leave, the roof swings back again.

Rock-salt in lumps of several pounds' weight is the best article for placing in troughs or mangers. This costs a good deal more than the

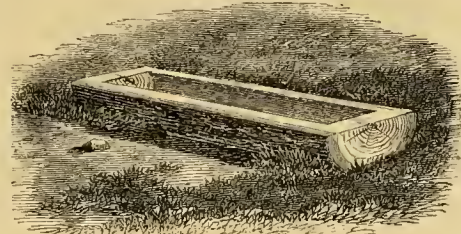


Fig. 2.—"DUG-OUT" FOR SALT.

salt from the same mines, dissolved, evaporated, purified, and furnished in sacks, as "Ashton's Factory-filled," simply because there is not demand enough for it to make it an article of extensive commerce. It is so hard that animals cannot gnaw it easily, and in simply licking it they do not get too much, but quite enough.

Cheap Shelter for Cattle.

A common excuse for the barbarous practice of wintering cattle at the stack-yard is the want of capital to build a good barn. For the prosperous farmer a convenient barn, as near the center of his premises as possible, is doubtless the most economical arrangement. But almost every farm furnishes the material for "hovels," with very little expenditure of money, and a temporary hovel may be made quite as comfortable as a barn. Our Irish fellow-citizens have a genius for this kind of structure, and one often sees by their rude houses, shelters for the poor man's cow, that are models of comfort, if not of beauty. He has but one to provide for, and its walls and roof are thrown up in a day; but if it pays the poor man to provide shelter for his cow, it certainly

will pay the large farmer to shelter his herd. Select dry ground for your hovel, and, if possible, the southern slope of a hill or the south side of a grove. Plant a row of posts ten or twelve feet apart, and eight feet high, for the rear of the hovel, and a second row, twelve feet high, about twelve feet in front. These rows of posts should be extended according to the number of cattle to be accommodated, allowing three feet for the smaller animals, and four for the larger. Boards or slabs may be used for the siding and for the roof, if these are available. Doors should open to the south, at convenient distances. A long feeding rack is constructed at the back side of the hovel, and the cattle are tied up, fed, and attended as if in a barn. The stacks of fodder are made immediately around the hovel, with reference to convenience in feeding. This is not so easy as to feed from the barn floor, but it involves very little more labor than foddering from the stack-yard, where the hay has not only to be thrown over the fence, but scattered

widely, to give every animal a fair chance. Not nearly as much hay would be wasted by trampling, and about as much would be saved by shelter as in the best constructed barn. If lumber is scarce, the siding and roof may be made of straw, bog hay, sedges, sea-weed, or even of the hay that is to serve for fodder. Thatch, well put on, will last nearly as long as shingles. Siding of straw, a foot thick, packed between poles, will last several years with slight repairs. But the stacks of hay may be so arranged as to form the most of the siding, and if the hay knife be used, the part next to the hovel may be left to the last, and be fed out in spring, after the extreme cold has passed. This style of hovel is much used upon the prairies, and in the new settlements, where timber is scarce, by the more careful farmers. It might often be used to advantage by all farmers in the North, who have not sufficient barn room for their cattle. It is as valuable for manure making as for shelter. If the floor of the hovel be covered a foot or more thick with muck, peat, or surface soil, well dried, it will absorb all the valuable parts of the urine, leaving only the water to leach away into the earth. The whole floor may be treated as in box stalls, adding loam and straw, as they are needed to keep the cattle clean and comfortable. All the manure of the cattle would be saved in this way, and it would add greatly to the riches of the farm. One great advantage of these cheap shelters would be a great saving in the carting of manures. If the hovel were located as it should be, upon the field to be broken up for corn, the manure would be already upon the ground for spring use. The only labor would be to compost the manure, and spread it for plowing in. This would give relief to the teams at a time when all their strength is wanted for the pressing labors of seed-time, and by adopting this plan the remote fields of the farm might be kept in good heart.

A Farmer's Skiff.

Many whose farms border on a stream or lake find it very convenient to have a boat of some kind. A correspondent in West Virginia sends us drawings and a description of a boat that can be made at a small cost. He states that he has had one in use for two years, and finds it very serviceable. It will carry six persons, and a large man can stand on one side of it without dipping water. He says:

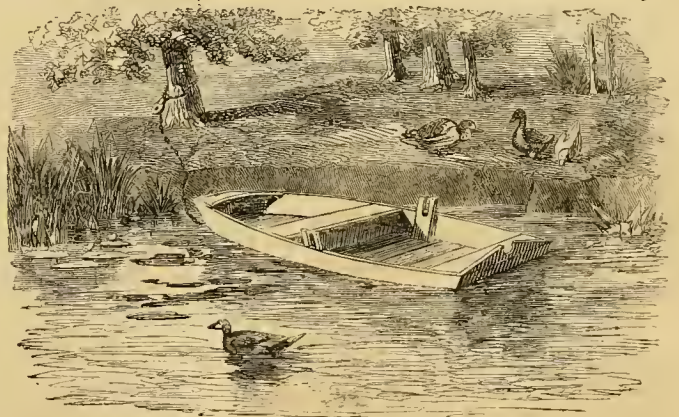


Fig. 1.—SKIFF AS COMPLETED.

"For sides, take two 1-inch planks, 16 inches wide, and 14 feet long; for ends, 2-inch plank, the same width. Cut the stern-piece 30 inches long at bottom, and 40 at top; cut the bow-piece 12 inches long at bottom, and 20 inches at top; then cut a center-piece 12 inches wide, 40

inches long at bottom, and 50 inches long at top; put these pieces in position, and *securely* nail the sides to them; this can be readily done by boring holes very near the ends of the side planks, bringing them into place by means of a rope, twisted by a short lever. After the sides



Fig. 2.—STERN PIECE.



Fig. 3.—BOW.

are thus secured, true up the bottom edges, and plank *crosswise* with $\frac{1}{4}$ -inch plank, $\frac{1}{2}$ of an inch apart; caulk these seams with oakum or cotton, and tar the *whole bottom*, and two or three inches up the sides. A keel 1, 2 or 3 inches

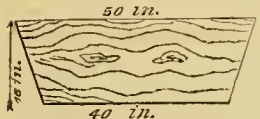


Fig. 2.—MIDDLE PIECE.

deep can then be nailed on, depending on the shallowness of the water where the boat is to be used. For seats, nail

a plank across each end, and one for the rower, over the middle-piece; two row-locks, about six inches above the sides of the boat, complete the job. These can be made of plank, set up on end, and fastened to the inside of the boat. A common carpenter can make such a boat in

about two days; and if planed and painted, it looks well. The ends ought to incline outwards about three inches to the foot. I have boated as much ice at one time in such a boat as four horses could haul in a wagon; yet it is

so light, that a little girl rowed it three-quarters of a mile against a slight current without fatigue. Fig. 1, on the preceding page, shows the skiff completed; fig. 2 is a diagram of the stern piece; fig. 3, the bow piece; fig. 4, the middle piece, and fig. 5, the row-lock.

Ogden Farm.—Past, Present, and Future.

Near Newport, R. I., there is a farm of sixty acres which promises to be of some consequence to the agriculture of America. Its improvement is the joint operation of Mr. Geo. F. Tyler, of Philadelphia, and Col. Geo. E. Waring, Jr., of Newport. The farm in question has not been undertaken for any fancy purpose. A desire to show what can be done and an attempt to teach others how to farm formed no part of the motive for the enterprise, which was, on the contrary, founded on the very sensible basis of a desire to make money by farming. The soil is a friable loam from five to ten inches deep, lying upon a very compact, bluish subsoil, such as is usually considered impervious to water.

The land lies over the crown of a gently sloping hill. The difference in elevation between the highest and lowest points, distant from each other rather more than half a mile, is about fifty feet. The summit of the hill is nearly flat, and all of the water that fell upon it, unable to descend through the hard pan for want of an outlet beneath, has always traveled by slow and easy stages, from one particle of the soil to another, down the slope of the land, save as evaporated from the surface, preventing all possibility of a fertile condition, despite repeated coaxings with manure, and good cultivation. During its previous history, the farm has been repeatedly sold at low prices, and rented at low rates; its owners and tenants having usually retired lame from its possession, it had earned the name of "Poverty Farm." When it came into the present possession, it seemed to many

Rhode Island farmers to be but a stepping-stone to the poor-house or the mad-house, and the well-worn compliment concerning fools and their money has not yet gone out of use in the neighborhood. The purchase was made a little more than a year ago. Since that time every acre of the land has been thoroughly drained in the best manner with tiles placed four feet deep in parallel lines 40 feet apart. Much of the land has been subsoiled and nearly the whole of it broken up. The interior fences have been, or are being entirely removed, the whole farm being thrown into a single field, with the exception of about four acres enclosing the buildings and yards. A three-story barn, 40 feet by 100 feet, has been built, and a stock of over twenty head of pure Jersey Cattle has been purchased, or bred on the place. This barn is designed to be a model of simplicity and convenience.

It is, of course, too early in the history of the improvement to do much more than to call attention to it, but the effect of the drainage has been so marked that it will already bear more than a passing notice. On the eastern side the drains of about twenty acres discharge through a four-inch outlet. We visited the farm the day after Thanksgiving, and found teams plowing what had been the wettest land of the whole farm—land which, without draining, surely could not have been plowed before June next; and the record of the flow at the outlet showed how prompt the action of the drains had been. On Wednesday, the outlet had been flowing about half an inch deep; on Thursday, Thanksgiving Day, it commenced to rain at noon, and stormed furiously until about nightfall, at which time the 4-inch pipe was running entirely full. The next day when we saw it, and when the land was in good condition for plowing, the flow of the outlet had receded to a depth of less than one inch, showing a much more rapid descent of the water through a compact subsoil than was looked for, so soon after the completion of the draining.

The fact that Ogden Farm is not intended to be in any sense a "model" farm makes it all the more valuable as a model. When a rich man, with "agricultural tastes," moves into the country, builds a \$25,000 barn, a \$1,000 poultry-house, and stone walls at \$10 a rod, and thinks that he is advancing the cause of scientific agriculture, we are disposed to sympathize very heartily with those who think that he is doing it a real injury. His investments will never bring a respectable return, and he does not care that they should, and his example must often have the effect of deterring men of smaller means from undertaking real improvements.

The farm in question, on the other hand, has had hardly a dollar expended upon it for the purpose of show or ornament. The whole investment is purely a business one, with capital sufficient to insure its success, if its plans have been judiciously laid out. We shall watch its course with interest, and shall endeavor to keep our readers informed of its successes and failures as they occur.

Steaming Food for Horses.

Mr. Stewart, of North Evans, New York, who, in an article furnished for the Annual Report of the Department of Agriculture, has stated very clearly the general arguments in favor of steaming food for farm stock, and the results of his own experience therein, mentions, incidentally, the fact that the steaming of hay is a sure preventive of heaves, and a sure cure of coughs and colds, instancing the case of an animal of

his own, which came in from pasture with a severe cough, and was entirely cured within two weeks by an exclusive steamed diet. This result is in accordance with the idea, that the irritation of the throat by dusty hay is a fertile source of heaves and coughs, and it suggests an important argument in favor of steaming.

On general principles, it being admitted that steaming food for neat cattle produces the most economical results, it is fair to assume that the steaming of horse food will be even more beneficial; for the reason that the digestive organs of the horse are much less elaborate than those of the ox, and that in all cases a much larger proportion of the food passes the bowels in an undigested condition. Therefore, whatever may tend, as unquestionably steaming does, to increase the digestibility of food, must have the effect of economizing, in a very marked degree, that which is given to our horses; and the application of steaming in the feeding of all of the animals on our farms would considerably lessen the incidental expenses of the process, in proportion to the number of animals fed.

The Management of Colts.

Probably American farmers are as successful as any other farmers in the raising of young horses;—that is to say, considering the character of the sires and dams, they bring about as good final results as attend horse breeding in any other country where breeding is only incidental to farm work. But there is one item of management which is either disregarded or imperfectly understood, and that is, the early *education* of the colt. Mr. Rarey has done much to upset the old-fashioned notion of *breaking* horses, and has shown that, by judicious bending, the necessity for breaking may be entirely obviated; but even Mr. Rarey's system confined itself chiefly to horses which had arrived at an age when their services could be made immediately useful. The reason why it is necessary to apply any strenuous system of training in bringing colts to their first work is, that they have to be taught to do that for which their previous life has in no manner prepared their minds. The first three or four years of a colt's life are passed at pasture, or in the stable, and the most that he learns is, to obey the restraints of the halter, and occasionally, though, unfortunately, too seldom, to allow himself to be cleaned. When the day of his usefulness arrives, he is to be taught his trade in a few days or a few weeks; and the bit, the bridle, the girth, the saddle, the hard-pressing collar,—all perfectly new revelations to him,—are to be crammed down his young throat in the most remorseless manner, and he is a fortunate colt if the cramming be done with a gentle hand. Too often his simple wonder excites his master's temper, and a contest ensues, from the effect of which he never recovers. If every colt could be treated as are, for example, those of Mr. Charles Sharpless, of Pennsylvania, the result upon the average temper of our harness and saddle horses would be remarkable, and at least one-half of the dangers of horsemanship would be obviated. It is Mr. Sharpless' universal custom, while the colt is still running with its dam, even at the age of six weeks or two months, to follow the handling and caressing to which it has been accustomed almost from the hour of its birth, by a gradual harnessing and playing with straps, and generally on the third or fourth day of trial, by hitching to a pair of light wheels, with which the little shaver fol-

lows its dam about the field. The colt learns these things at this early day as easily as it would learn anything else, and the lesson is never forgotten; so that when the time for actual harnessing comes, it creates no surprise, makes no trouble, and gives rise to no contests.

Improvements in Draining Tiles.

BY COL. GEORGE E. WARING, JR.

In view of the fact that in my article on "Tile Draining," published in the *Agricultural*



Fig. 1 and 2.—TILE AND COLLAR.

Annual for 1867, and in my "Draining for Profit and Draining for Health," published by your house, I have very strenuously insisted upon the necessity for using silt basins in the laying of underdrains, I have thought it advisable to state explicitly the reasons which have led me in my own practice, and in advice to others, to dispense almost entirely with their use. They were at best a rather imperfect and quite



Fig. 3.—TILE AS LAID.

expensive means for preventing the obstruction of drains by accumulations of silt; but, with the draining materials procurable at the time when the book and article above alluded to were written, they were indispensable. During



Fig. 4. Fig. 5.

the last year I have used largely the tiles manufactured by Messrs. C. W. Boynton & Co., of Woodbridge, N. J., which are made with certain modifications and improvements that very greatly lessen the necessity for silt basins. Indeed, in draining my own farm of 60 acres, I have not made a single one of these. The tiles referred to are made from the tenacious clay of the

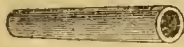


Fig. 6.

Amboy region, which is so much richer in quality and so much more uniform than the brick clay ordinarily employed for the purpose, that it is found easy to make even the smallest tiles two feet long, which, of itself, is a great advantage, inasmuch as it reduces by one-half the number of joints, which must always form a greater or less obstacle to the smooth flow of water, while there are still openings enough remaining for the complete admission of soil water. Only round tiles are made at this establish-

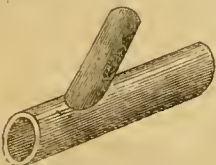


Fig. 7.

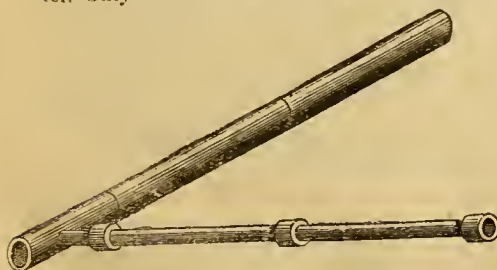


Fig. 8.—CONNECTION OF LATERAL WITH MAIN.

ment, the smaller ones being provided with well-fitting collars for connecting their ends.

The tile and collar respectively are shown in figs. 1 and 2. The continuous line is laid as shown in fig. 3. The curved tiles, such as those shown in figs. 4 and 5, bent to various degrees, in order to suit the requirements of different circumstances, I have found of great assistance, especially in abruptly changing the direction of main drains. Figure 6 represents an enlarging tile, by which, in increasing the size of a drain, as from two to three inches, the abrupt rough edge, formed by inserting the smaller tile into the larger one, may be avoided. This gradual enlargement will effectually prevent the checking of the flow that is unavoidable in all cases where a confined stream breaks abruptly into a larger conduit. The most important improvement that Boynton has made, and the one which does more than any other to obviate the need for silt basins, is the junction



Fig. 9.

piece, shown in fig. 7, which is used for connecting lateral drains with mains, or one main with another. These junction pieces are made complete, as shown in the figure, for all the different sizes of mains and laterals; and, by their use, the water from the lateral is introduced into the main at an angle of 45°. As it enters near the bottom of the main it materially accelerates the flow in the latter by its force of entry, while, with the best joint that it was formerly possible for us to make by the aid of the tile pick, there was an interruption of the flow and frequently a tendency to deposit silt at the junctions. By the use of these junction pieces, the points of intersection are made the safest of the whole drain, instead of being, as they were under the old system, the most insecure. The manner in which the collared small lateral is connected with the lower part of the larger tile of the main drain is shown in fig. 8. When the

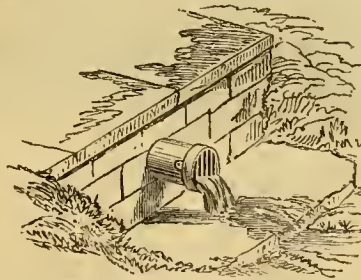


Fig. 10.—VIEW OF OUTLET.

lateral approaches the main at a right angle, or at a very obtuse angle, the curved tile shown in fig. 5 should be used, in order that the flow may strike in the direction of the oblique junction.

Messrs. Boynton & Co. have also made an earthen-ware grating for covering outlets, which is very much cheaper than the wire grating recommended in my book; and, as the last pipe of the drain is glazed or vitrified ware, the outer end may project a little beyond the mason work without fear that it will be injured by frost. This grated outlet is shown in fig. 9. The grating is movable, and can be easily detached for cleaning when necessary. The appearance of an outlet, so arranged in connection with masonry, is shown in fig. 10, and it is difficult to conceive of any plan more simple or more effective.

SOWING CLOVER SEED.—Test the seed, unless it is known to be good. To do this, take a saucer half full of sand, pat it level, sprinkle on a known number of seeds, lay a piece of muslin over them, and put a light layer of sand upon it; keep all moist, and after a few days,

see how many seeds germinate. Before sowing clover, practice taking a pinch for a cast between the thumb and two fingers, doing it many times, until the same quantity is taken each time. The chief advantage of sowing upon a light fall of snow is, that the evenness and regularity of the casts may be seen. To sow well requires practice. The field should be paced, the amount of seed estimated, then measured out, and divided, for a beginner, into as many equal parcels as he will need to test the accuracy of his sowing. It is best for a very raw hand to sow half the entire lot of seed, making it cover the whole field, and then, going at right angles, to sow the other half. A good way is, to wait until the seed starts and shows spots which have too little and then scatter on some additional seed, so as to remedy the defect.

The Award of Prizes at Fairs.

Some very absurd awards, recently made in the name of one of the prominent poultry societies of the country, have caused the general subject of awards at fairs to be discussed by persons especially interested in agricultural and kindred societies. Two questions will at once set in a clear light the delicacy of this subject, viz: 1st. What shall the officers of a society do when their judges make and ask them to promulgate unjust and absurd awards? 2d. What kind of judges and judgments will be obtained if the judges know that their reports of awards are subject to be overruled by the executive committee of the society? Men who are placed upon committees of award ought to know more than the executive committee of the society about their own specialties, and if any society could secure the services of such men, we are sure, that while they would not submit to have their awards revised by anybody, they would be happy to conform to the most stringent rules for the guidance of committees, which might be laid down by the society. Judges who would tamely submit to a revision of their work are just the men not wanted as judges. True, an ignoramus might be just as sensitive in regard to his judgment as a wise man; but, nevertheless, it is most important that all judges should feel that their decisions, if made within the just rules of the society, are irrevocable. Without this, there can be no generally good decisions secured. The question then arises—What rules ought the society to lay down, and how instruct its judges? It is almost universal, that certain rules upon points of honor are considered established by usage; for instance, no man should pass judgment upon his own articles, or upon those in which he may be considered to have a personal interest, as upon those of a son or other friend. Neither may a person accept a position where his bias in favor of some unimportant peculiarity will interfere with his fair judgment. The society should, however, cause to be printed and placed in the hand of committees of judges, a set of rules, somewhat like the following:

Awards will be made impartially, having reference solely to the excellence of the articles under consideration, and entirely without reference to the number of prizes the exhibitor may take, or to any remuneration of deserving exhibitors, even though every prize be taken by one person.—Any attempt of an exhibitor to deceive, in regard to anything, and especially in reference to ownership, breeding, age, or characteristics of any of his live-stock, shall disqualify both the exhibitor and all his stock.



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GOING TO MARKET.—DRAWN BY E. FORBES.—Engraved for the American Agriculturist.

—No awards may be made to unworthy articles. When there is no competition, an article unworthy of the first prize in such a case is also unworthy of the second or third, for the society commits itself for the excellence of anything to which a prize is awarded.—In judging of live-stock of all kinds, awards must be made in accordance with recognized standards of excellence, and scales of points; and in cases of doubt, the judges must consult the counselling committee through the superintendent, or superintendent of the department.

Decisions and awards made in accordance with these rules are *final*. No appeal from the decisions of judges will be entertained, except on the plea that the rules are departed from, and such appeals will be heard by the executive committee of the society at any time before or after the promulgation of the awards. Every society should furnish for the information of judges, full scales of points, descriptions of breeds, and specifications of disqualifying and undesirable characteristics. It should, moreover, provide convenient scales for weighing poultry, and, if possible, books containing engravings of famous prize birds, and information of value to judges, in enabling them to “post up” upon points which few men retain in their memories.

Going to Market.

The author of Walks and Talks mentioned last month the waste of time in going to town with a poor team. When we have been in Southern cities, the slow and cumbrous way of getting to market has struck us as a great waste of time and power. In those cities it is the custom to have regular market days, usually two in each week. Early in the afternoon preceding market day, the country wagons begin to arrive, and take places along the streets. The vehicles are usually large, heavy, out of all proportion to their contents, and are covered with a canvas top, stretched over bows. The wagons are backed up to the side walk, and the horses or mules unhitched, tied to the sides of the wagon, and fed with provender which has been brought along. The wagon itself serves as a hotel for the driver and those who may accompany him. By nightfall, the streets present a grotesque and lively appearance to a stranger, with the many odd-looking wagons, and numerous animals bivouacked in two long rows. Our artist gives a picturesque view of one of these heavy wagons on its way to market; the driver is apparently belated. The market wagon in use around New York is a comparatively light

affair, upon springs, and without a top. The “truck” is packed in, and covered with a large canvas, which is drawn closely over the load. In New York, the raiser rarely retails his produce; it is taken off his hands at once by the grocers, and retailers, and the streets are cleared of wagons by seven o'clock in the morning.

OLD CURRANT BUSHES are among the most unpromising things with which one has to deal; their tangled and misshapen stalks present a puzzle to the novice. Whatever is done should be undertaken during the first mild spell, as the currant pushes very early. The bush will probably have numerous shoots starting from below ground, or near the surface; cut out all but four or six of these, according to the size of the plant, leaving only the most healthy looking ones, and taking care to have these as equally distant as possible. The fruit is borne on wood two or more years old. One-year-old wood is distinguished by its different color and small buds. Cut out all weak shoots of this kind, and shorten the stronger ones two-thirds or one-half. Manure around the bushes, and when dry weather approaches, mulch. Make the old bushes do their best, and start a new plantation which will come into bearing in two years.

In the Flower Garden.

What should we put in the flower garden? It is quite time this was settled, as these March winds are drying up the ground, and the days when we can work will soon be here. Annuals,



Fig. 1.—BLEEDING HEART.

bedding plants, and perennials, all have their uses, and we do not sympathize with those who decry either. Among annuals are some plants that we cannot well do without, and it is the same with bedding plants—by which we mean those soft-wooded green-house plants that are used for one season only—but of both of these we will speak another time; at present, we wish to say a word about our favorites, the perennials. These are plants which die down every year, while the faithful old root lives, and when the sun calls warmly enough, sends up its shoots to gladden us. With our liking for plants of all kinds, we must own to a partiality for these; when frost comes, or before, they go to their winter's rest, and all through the winter we enjoy thinking of them as they lie under their covering of snow, and we long for the day when we shall welcome their return. At last, a tender shoot breaks the ground, and looks about to see if it is safe to venture out; if all is right, the rest of the shoots soon follow. How vigorously they push, nourished as they are by the bountiful mother root! and how soon they develop into things of beauty! We wish people would take more to these perennial plants, which, once obtained, remain as a part of the place, the only trouble they give being that of



Fig. 2.—NOBLE FUMITORY.

reducing their size. Once in three or four years the roots get too large to do well, and they need to be taken up, divided, and reset. At present, we give an account of a few that are our especial favorites; the list might be extended indefi-

nately, but these are all good, and may all be had of the florists and nurserymen. Most perennials may be raised from the seed, in which case the young plants must be carefully cultivated the first year, and they will flower in the second. All the plants here mentioned do best in a light, rich soil, but we have grown them satisfactorily in a very poor and sandy one.

BLEEDING HEART—*Dicentra spectabilis*.—We put this at the very head of the list of perennials for its hardiness, grace, and beauty. It was known to Linnæus, who called it *Corydalis formosa*, but it is less than twenty years ago that Mr. Fortune placed it in the hands of cultivators. Since that time, the poor thing has had a hard time of it as to names. It has been called *Dielytra*, *Diclytra*, *Dylithra*, etc., by the florists and nurserymen, who, as a general thing, if there is a wrong name for a plant, will be sure to hold on to it. Figure 1 gives an idea of a clump of this plant, which grows to the height of two or three feet. The foliage is much like that of a *Pæony*, but of a more delicate and tender green. The grace of the bending racemes, and the beauty of the individual heart-shaped, rose-colored flowers, make it surpassingly attractive. It seeds sparingly, but multiplies freely by the root. Blooms through spring and early summer. There is a whitish variety.

NOBLE FUMITORY—*Corydalis nobilis*.—This is not a true Fumitory, as the genus has been separated; but it is not easy to change common names when they are once well established.



Fig. 5.—MISSOURI EVENING PRIMROSE.

Figure 2 gives the general appearance of the plant, the resemblance of which to the *Dicentra* will be at once recognized; they both belong to the same botanical family. This blooms in April, pushing up its clusters of light yellow flowers to about the height of a foot. It is a plant that soon does up its work; as the foliage dies down very early, and as all vestiges of it are soon gone, its place should be marked, for fear that it may be forgotten and that its subterranean life may be accidentally disturbed.

JAPAN ASTILBE—*Astilbe Japonica*.—The foliage of this plant (fig. 3) would give it a place in the garden, as it is of so rich a green, and so handsome in form; but in addition to its fine leaves, it produces a pyramidal cluster of pure white, delicate flowers, upon a stem one or two feet high. A most charming, hardy plant for the border, and one that is often used for forcing. Some two years ago, we figured the flowers of the natural size; the engraving now presented shows the habit of the plant. There is a variety with beautifully variegated foliage, which holds its golden markings until our hot days come on, when it is green for the rest of the season. Florists will persist in calling this *Spiræa Japonica*, but it is not a *Spiræa*, nor does it belong to the same botanical family.

MISSOURI EVENING PRIMROSE—*Oenothera Missouriensis*, also called *O. macrocarpa*.—A

low growing plant, with prostrate stems, a foot or more in length. The leaves are of a dull, hoary green. The flowers, which are of a fine, golden yellow, are from four to six inches across; they open towards evening, and remain until the next day's sun becomes too hot for



Fig. 3.—JAPAN ASTILBE.

them. The plant (fig. 4) blooms all summer, and is a very effective one to use in masses.

PERENNIAL FLAX—*Linum perenne*.—This, a native of the country beyond the Mississippi, is shown in figure 5, as far as its form and habit go, but we cannot give an idea of the beautiful blue of its flowers, which the French aptly call "celestial." The plant throws up numerous slender stems, about a foot and a half high, which bear great numbers of flowers, and has a remarkably airy appearance. The individual flowers soon wither, but they are each day replaced by new ones, and the plant continues to produce its cloud of blue bloom all summer

Packing and Shipping Vegetables to a Distant Market.

BY S. B. CONOVER, WEST WASHINGTON MARKET, N. Y.

[A good share of the many persons who have gone to the warmer States for the purpose of raising fruits and vegetables for the markets of northern cities are destined to disappointment. They may be entirely successful in raising good crops, but they will be disappointed in the returns they receive, for the reason that their articles did not reach the purchaser in good order. In cities the appearance of a package has much



Fig. 4.—PERENNIAL FLAX.

to do with the price it brings. To help those who need instruction in the matter, we have requested of Mr. Conover, one of our most experienced commission-merchants, some articles on

the packing and shipping of fruits and vegetables for the New York market. His directions will, of course, serve for other markets.—Eds.]

The condition in which vegetables and fruits should be packed for shipment requires the exercise of some judgment. Some, such as Tomatoes and Peaches, are picked in a partially green state, and ripen up during transportation, so as to be in a salable condition when they reach the market. The grower who lives within a day or two of a market can pack such things in a much riper condition than one whose produce must be four or five days in transportation. Other articles, such as Cucumbers, Beans, and Peas, commence to deteriorate from the moment they are picked, and, especially if heated in the hold of the steamer, often arrive in a perfectly worthless condition. Packages receive much rough handling; injury from this cause is in a measure prevented by packing as firmly as the nature of the article will allow. Never send poor, small, or worthless articles to market; they will not pay the cost of transportation.

CRATES, to hold one and one half bushel, are made of two ends and one middle piece, of inch stuff, 18×8 inches square; to these, slats sawed of half-inch stuff, 27 inches long, are nailed, leaving spaces of one-half to one inch between the slats for ventilation. Crates of this kind are easy to handle, and their contents are not so liable to be injured by rolling, as those of barrels. Potatoes, Sweet Potatoes, Onions, Cucumbers, Beans, Peas, and Apples, are shipped in the size above given. For Tomatoes, Peaches, and Pears, a smaller sized crate is used, which holds two $\frac{5}{8}$ peach baskets, equal to one and a quarter bushel. The middle and ends are 18×8, but the slats forming the sides are but 24 inches long, of $\frac{3}{4}$ or $\frac{3}{8}$ stuff, allowing the spaces between the slats for ventilation.

POTATOES.—These should not be dug until the "skin is set," i. e., so ripe that the skin will not readily rub off. When dug, they must not be left exposed to the sun, else the sap next the skin will scald, which soon causes fermentation and decay. From this cause, all in the crate or barrel are frequently rotten by the time they reach the market, or if only a portion decay, these injure the sale of the sound ones. Pack in barrels for a near market. If sent from the South, potatoes should be packed in crates holding one and a half bushel. In filling, leave out all cullings and wormy or decayed potatoes, and shake down before mailing up. Potatoes should be thoroughly dry, i. e., free from all outside moisture, and be cooled as much as possible before they are packed.

ONIONS.—Pull when the tops fall over, and cure in the shade. The sun soon scalds them, when the outer skin becomes slippery, and they soon rot. Cut the roots close, but leave the tops an inch or an inch and a half long. Onions should be perfectly dry and shelly when packed, and none that are soft or rotten put in.

CUCUMBERS.—Pack only those of medium size and perfectly green. The White-spined is the best variety for shipping. Yellow cucumbers are perfectly worthless in the market.

BEANS AND PEAS.—Let them be perfectly dry and sound when packed, and keep out all bruised or decayed ones. Do not ship Beans that are too old, or that will not snap when broken. See that the crates are well filled.

TOMATOES.—At the far South, Florida and Georgia, these should be picked just as they begin to turn red at the stem side. Put in none that are ripe, wormy, or cracked. A few ripe ones packed with the rest will rot and spoil the

whole crate. Shake down and have the crate so full that a moderate pressure will be required to allow the top to be nailed on. If picked at the right time and properly packed they will ripen up so as to be salable by the time they reach New York. For Virginia and places further north they may be a little riper when picked.

BEETS AND CARROTS.—Cut off the tops, leaving about one-half an inch. Keep dry and pack in crates, having them well filled.

Timber Culture—The Larch.

BY D. C. SCOFIELD, ELOIN, ILL.

[The writer of the following article is not a nurseryman, but a tree cultivator, who is very enthusiastic in the matter of the cultivation of forest trees. He puts the culture of the European Larch in a striking light. It will be noticed that Mr. S. expresses a preference for the Tyrolean variety, and gives his reasons for it. We do not find the seed of this variety in the catalogues of our dealers, but probably a demand for it would bring a supply. The common European Larch is sufficiently valuable to induce those who wish to grow timber to take that. We wish that Mr. S. had given us the cost of planting, as well as the returns for an acre. Seed of the European Larch is offered by our dealers at \$2.50 per pound. We have had no experience in sowing it, and as in works devoted to tree culture we find no special directions, it is assumed that the seed is to be treated like other seeds. We should advise to sow in a good soil as early as possible. It is useless for any one to sow tree seeds unless he will take care of the young plants, and the young seedlings of the hardiest forest trees need as much care as those of the cabbage or tomato. They need weeding, watering, and frequently, shading.—Eds.]

At the Annual Fair of the Kane County, Illinois, Agricultural Society, held in Sept. last, two European, or Tyrolean, Larch trees were placed on the grounds for exhibition—one two years old and ten inches in height, (and a fine plant, indeed, the usual size being only about an average of six inches), grown from the seed on American soil; and the other eleven years older than the former, standing thirty feet in height, twelve inches in diameter at the base, which was a plant imported by the writer from Scotland, in 1857, when only six inches long. At the close of the exhibition the larger tree was cut into fence posts, each seven feet in length, making four posts, the but end making two posts. This tree was cut from a grove of Larch, set three feet apart in the row. Now suppose there had been one acre of ground set eleven years ago with these Larch; there would have been 4,820 trees. Allowing that each tree makes four posts, we have the round number of 19,280 posts which at twenty cents each would amount to \$3,856, equal to more than \$350 annually for the crop of eleven years. But instead of cutting off the entire crop we take only one-half, and leave the residue to grow on at a distance of 3 to 6 feet apart, and a crop may be gathered worth \$1,882, or equal to an annual crop of more than \$150 per acre. Now there are standing on the ground more than 2,400 trees, which, left to grow for twenty years, will be 60 feet, or more, in height, and will each make thirty fence posts, or ten railroad ties, which at 20 cents per post will amount to \$14,400. But when we take into consideration the increased value of these posts over all other kinds of wood, from their imperishable character, the estimate would be double. Allowing that the price of timber remain what

it is now, the profits of timber culture would far exceed all other productions of the soil.

Another important item in this estimate is the very small outlay to produce this crop. It costs less money to plant an acre of European Larch than an acre of hops, it requires cultivation only two years from the planting, and the next labor is the gathering the harvest. If the good of the country and of future generations will not induce the farmer to plant forests, then let his love of gain prompt him to the work. (In a letter received since the above came to hand, Mr. S. says:—) In regard to the *Tyrolean* and *Common* Larch of Europe I learn from late replies to my queries proposed to some of the leading nurserymen and foresters of Europe, and those who have made the distinction in their catalogues between the two, and uniformly rank the "Tyrolean" variety at a higher price than "Common," that they call seedlings grown from seed collected in Switzerland, "Tyrolean," and from seed grown in Scotland, "Common do." Several years ago the late Peter Lawson, of the firm of Peter Lawson & Son, in answer to my inquiry about the durable qualities of the two varieties, said: "Either is more durable than Red Cedar, but of the two the Tyrolean had the preference. But the European Larch when brought into competition with American is as English oak to the Basswood for durability."

Low-headed versus High-headed Trees.

BY DR. E. S. HULL, ALTON, ILL.

[A course of lectures by various distinguished agriculturists and pomologists was given in January last at the Illinois State Industrial University. In a lecture on Orchard Fruits, Dr. E. S. Hull, a most successful Illinois orchardist, made the following remarks, which were reported for the *Agriculturist* by Mr. O. L. Barler, of Upper Alton, Ill.—Eds.]

Shall we grow our trees with branches starting from the ground, or shall we prune? and to what height? These and similar questions are often asked. It would be superfluous to give any illustration of growing fruit trees to low heads, since for the past sixteen or eighteen years all our journals, both horticultural and agricultural, have vied with each other in descriptions how best to accomplish, as they supposed, so desirable a result. Indeed, so much has been written on this point, that we have gone from trunks six to eight feet high down to those of as many inches. These low-headed orchards on coming into bearing—have disappointed, or must soon disappoint, their owners. The conditions attending the growing of fruits are now so changed from what they were but a few years since, that trees with *low heads* are in the main no longer a success! They increase the labor of cultivation many fold. The low branches cut off the under circulation, inducing disease in the foliage and rot in the fruit. They invite insect enemies, and make it difficult, if not impracticable, to arrest their ravages. In short, *low heads* are a failure, and the sooner we can induce people to start the heads of their trees at a proper height, the sooner will it be possible to successfully destroy insects, to ward off diseases, to insure color to the fruit, and make it practicable to cultivate quite up to the trees by means of horse-power. In planting an orchard, we select trees as to age, according to their kind, Apricot, Peach, Plum, Cherry, one year old from the bud or graft; Apple and Pear, two and three years old. The four first named, if well grown, will be not less than five or six feet

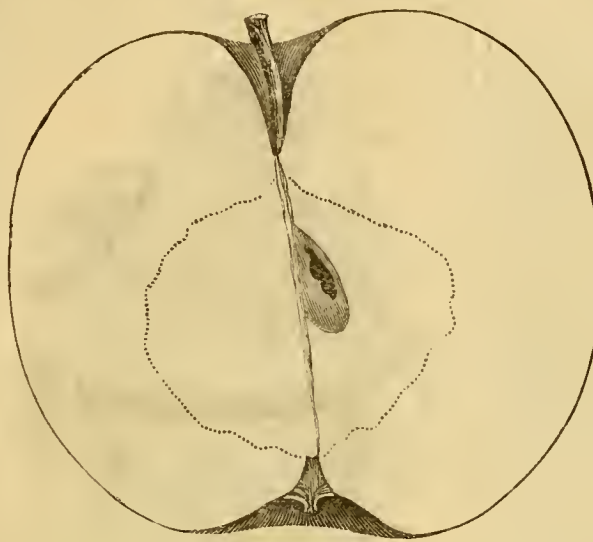
high, and will have many side or lateral shoots branching out horizontally from the main stem. In addition to the side branches there will also be found numerous buds extending from the ground to the top of the tree. Cut away all the branches and buds to the height of twelve or fifteen inches. Next cut away all buds below the point at which it is intended the tree shall form its head, except six or eight, which are to be left at regular intervals and on different sides of the stem. These last-mentioned buds will push into as many branches as there are buds. It will be necessary to keep these side branches pinched back to ten or twelve inches during the summer, to prevent them from running off with the growth, and robbing those buds and branches selected for the future head of the tree. Some time after the fall of the leaves, and before growth commences in the spring, reduce the side branches to one bud each, and when the branches from these buds shall extend to ten or twelve inches, pinch them, as directed in the first year. The treatment will be the same in the third year as we have directed for the second, except at the end of the season cut away all the side branches, except those intended to form the head of the tree. The object of the side branches, of which mention has been made, was to strengthen the stem or trunk of the tree. Without them the tree would have become top heavy and bent the trunk. Trees that have been grown as we have directed will have straight and tapering stems, which will be of sufficient strength in their fourth year to stand erect.

Digging Holes for Trees.

A Connecticut friend, who is full of common sense, has his own way of sending us occasionally a fragment just as it occurs to him, of which the following is a specimen. If he would take the pains to write out his horticultural and agricultural views and experiences, he would rank among our most popular writers.—Eds.

There is a deal of good horticultural sweat wasted in digging holes for trees, when we dig so deep and wide as the fathers in horticulture have taught. There are unfinished portions of creation, of course, where, in planting an apple-tree, it may be necessary to remove a load of gravel, and bring a load and a half of soil—growing trees, as it were, in pots. But would it not save transportation to pack one's baggage and decamp from such places? In a fair soil, if the transplanted tree but have the earth about it to itself, and be not robbed by some nimble-rooted green-crop, under the guise of "cultivation," or by grass, or foul weeds, of just that ready nutriment which the dismembered tree so sorely needs, fifteen or eighteen inches is deep enough for the holes. When the tree-top (I am thinking of apples) is twenty, thirty, forty feet in diameter, even the deepest holes the most enthusiastic cultivator ever perspired in, are insignificant. Manure, too—why put in under the young tree a Golgotha of bones, old boots, stones, tin pots, and what-not? One shovelful of old barn-yard manure will feed a young tree for a year, perhaps more. Can't we save some of this ardor for the time when the tree needs a little pruning—a twig here and there—and instead of such extreme generosity with the sub-soil at the start, show a continuous disposition to let the tree have the surface-soil, which it so delights in? Can't we keep up the enthusiasm long enough (having secured thrift, which is half the battle against insects), to keep vigilant watch for the insidious borer? But that matter

of insects must be taken hold of in great earnest. The negligence of cultivators in this respect is costing the nation many millions.



STARK APPLE.

Western Apples—The Stark.

The Stark Apple is a variety now attracting attention in the West, and great claims to superiority are made for it. We have already given our opinion of the samples as they came to us, which was to the effect that, while it appears to be a valuable market variety, it cannot be classed as first for quality. The Stark is described in the Horticultural Annual for 1869; the drawing reaching us too late to appear there, we give it here, with Dr. Warder's description.

"STARK.—Tree, vigorous, healthy, and strong, with open head; productive. Fruit, globular, regular, large; surface, smooth, yellow, covered generally, mixed red, splashed crimson; dots, numerous, medium, dark. Basin, regular, rather wide, sometimes folded; eye, medium, closed. Cavity, deep, regular; stem, medium to long. Core, medium, closed, meeting or clasping the eye; seeds, few, imperfect; flesh, yellow, breaking, juicy; flavor, subacid, rather agreeable; quality, good; use, market and kitchen; season, December and all winter. 'As good a keeper as the Gilpin and Willow Twig.' Bears heavily on alternate years. The size and showy appearance of this apple, its firmness in transportation, and its color, which hides the effects of bruises, all make it a good market fruit, while the vigor and productiveness of the tree cannot fail to make it profitable in the orchard. Specimens received from H. McMaster, Leonaardsburgh, Ohio, who has cultivated the variety with profit, and esteems it very highly. Mr. A. H. Gaston, of Henry, Marshall Co., Ill., thinks it 'the very best apple in America,' with this I cannot agree, at least as the variety is produced in Ohio, where those who cultivate it value it as a good and profitable winter apple."

Hedge Planting on the Prairies.

G. N. M. gives the following as his experience:—Hedge plants set in the raw (or wild) sod, turned over, will do well. We take a narrow spade, and grind the corners round and sharp. Then get a ball of strong twine, four or five rods long, and begin at one end and tie knots as far apart as the sets are to be; take coarse, red yarn, cut it short, and insert a piece of yarn in each knot before it is drawn up

tight. When this is done, you have a line with which the plants can be set. Take a spade, set it along the side of the line at the knots, drive it in a little slanting, give it a shove forward, take a set, and put it in while the spade is forward, then draw back the spade to where it was driven in, hold on to the top of the set, pull out the spade, and you are ready to repeat the same operation. Two men and a smart boy can set a half mile in a day. When one line is done, let a man tramp along each side, and between the sets, being careful to close all of the opening that the spade makes. I have three quarters of a mile set in that way one year ago last June, which has done well. I prefer to throw up the ground where I wish to grow a hedge-row, as it is one-half better, or the sets will be one-half better, in the same time, than on ground that is not thrown up. [We have no doubt

that very rapid work may be done in this way. The tramping of the soil, after the plants have been set, is an important part of the operation. It is essential to the success in setting shrubs and trees of any kind, that the soil be brought in close contact with the roots.—ED.]

GRAFTING STONE-FRUITS.—To be successful, the grafting of stone-fruits must be done very early. The cherry needs to be grafted earlier than the plum, and the operation must be performed on both before the buds commence to swell. The peach is said to succeed by root grafting, if done early enough in the spring, but in this we have had no experience.

The Management of Hot-beds.

Those who have requested us to tell them how to make a hot-bed will find sufficient directions in "Notes upon Work." The making of a hot-bed is a very easy matter; when it is done, it has to be properly cared for, and here is where many fail. The plants in the bed, naturally tender from the manner in which they have been raised, are in a confined space, with a heating medium below them which gives the air in which they are enclosed as high a temperature as they can well endure. If now this already heated space be made still hotter by the direct rays of the sun, the tender and succulent plants at once perish. As soon as the plants are up, the bed must have not only daily attention, but at least twice daily—morning and afternoon. In the morning, about nine o'clock, the upper edge of the sash must be raised by means of a wedge-shaped block, the opening being more or less, according to the interior temperature and the heat of the sun. This operation is termed "airing," and by proper attention to it, injury from overheating may be avoided. In guarding against danger from heat, that from the opposite extreme should not be incurred. The sashes are to be closed in the afternoon when the force of the sun has abated, and on cold days opened very slightly, or not at all. Watering, when required, is to be done from a watering-pot with a very fine rose, so as to compact the earth as little as possible. Weeds are sometimes troublesome in hot-beds, and they should never be allowed to get a start.

Hospitality to Our Friends the Birds.

While the horticultural societies are discussing the question whether birds are not more plague than profit, we assume that certain small birds are useful to the cultivator. The wrens have long been accepted as friends, and now the European sparrow comes to us, to help in the war against insects. The last named have been on their good behavior thus far, and no one has been able to bring any serious charges against them. These little birds seem to prefer to be near dwellings, and to court our protection.

Wrens, sparrows, and the like, will avail themselves of any cavity that seems convenient as a nesting place, and will occupy houses with great readiness. Bird-houses have become a kind of institution in New York City since the sparrows have come, and some structures have been put up that are more elaborate than tasteful.

One of the public squares has so many of these ornamented bird-houses that it looks much like a

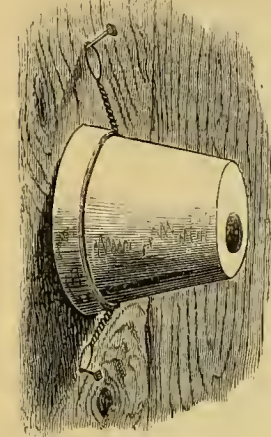


Fig. 1.—FLOWER-POT HOUSE.

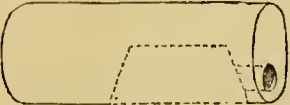


Fig. 7.—DIAGRAM OF FIG. 6.

confectioner's shop. When we consider that all that the bird needs is a secure cavity in which to place its nest, it will be seen that all this painting and gilding is as useless as it is in bad taste. The rudest box will be occupied as readily as the most costly and highly ornamented bird-house. Some years ago we gave an account of a curious bird-house. Some one had hung an old oil-feeder upon the picket of a fence; this was taken possession of by a pair of wrens, who

habited. Even so rude a thing as a common flower-pot was converted into a bird-house by Mr. Edwin Roberts, of Brooklyn. Figure 1 shows how the flower-pot was suspended. The



Fig. 2.—THATCHED HOUSE UPON POLE.

hole at the bottom of the pot was of course enlarged, as may readily be done by nipping out small bits with a pair of pincers, or by careful punching with an iron rod, the bottom of the pot being placed upon the ground. Leaving these simple devices, we give some more elaborate, yet tasteful ones, devised by our artist. Where the bird-house stands out by itself, it should not be a piece of "gingerbread-work," but in keeping with its surroundings. Figure 2 shows a very pretty rustic one, intended to be placed upon a pole. It is made of a portion of a nail-keg, or similar receptacle—in fact, it is a small tub well secured by hoops. The interior may be divided into as many compartments as is desirable, each one with a small opening outwards. The interior being arranged as a tenement-house, the exterior is covered with pieces of bark neatly nailed on. The pole passes through far enough to allow of the attachment of the straw which is to serve for the thatched roof. A house of this kind placed upon a rough pole, with a Trumpet Creeper or other vine

six or eight-sided, and has a rustic appearance given to it by the use of bark, and the burs of the Sweet Gum tree (*Liquidambar*). Figure 4 gives a pretty design, in which an old oyster or paint keg is made to serve as the basis of the structure. Its exterior is covered with bark; it has a roof of the same material, and is placed on a rustic shelf. In figure 5, a keg may be used, or a cut of solid timber may be taken, a portion of the bark being removed to allow of the cutting out of the cavity, and the bark carefully tacked on afterwards. Hollow sticks can often be found which with a little ingenuity may be converted into bird-houses, and where these are wanting a sound stick may be made to serve, as shown in figure 6. A portion of the bark is to be removed, and a cavity made, as seen in the diagram, fig. 7; a hole for an entrance is bored, and the bark is replaced. A sufficient number of illustrations are here given to show that it requires no great amount of skill to afford accommodations for our feathered friends, that will be unobtrusive and tasteful without taxing the ingenuity of the carpenter or painter. If paint must be used in any such structures, let it be of an inconspicuous color.

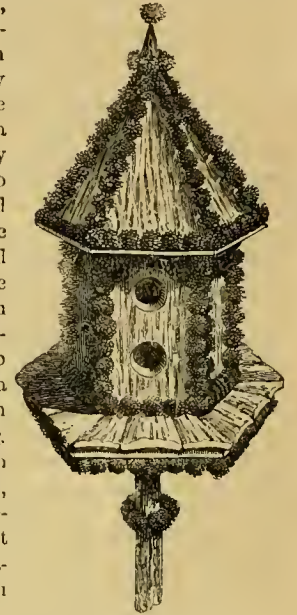


Fig. 3.—HEXAGON HOUSE.

PEACH STONES for planting should have been kept mixed with sand or sandy loam, and exposed to the frost. Freezing is necessary to insure their germination. If the stones have been kept dry, mix with earth, and freeze them at once. If they show no signs of germinating at planting time, they must be cracked, and the

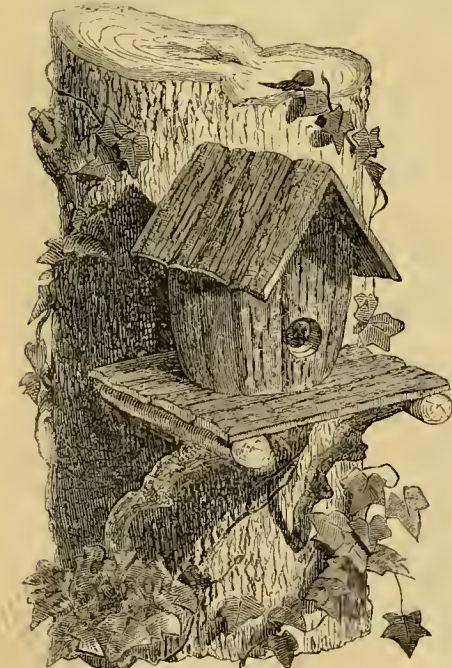


Fig. 4.—RUSTIC HOUSE.

built their nest and raised a brood in these odd quarters. A simple box with a hole in it, fastened against a tree, will be very sure to be in-

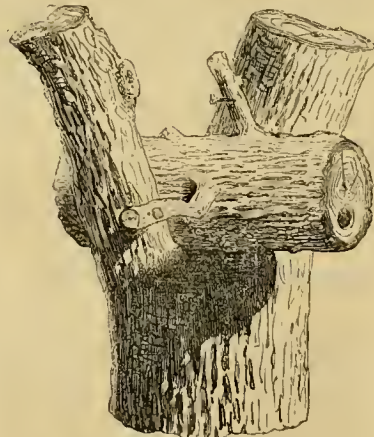


Fig. 6.—A HOUSE MADE IN A LIMB.

running over it, is exceedingly picturesque. In figure 3, we give one of the least objectionable of the New York houses; it is made either



Fig. 5.—RUSTIC HOUSE.

seeds mixed with earth, and kept warm until they begin to start, taking care to keep them moist. Plant as soon as they begin to start.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

A Family Festival.

BY MRS. L. LAMB.

It being John's birthday, and having nothing prepared for a present or a remembrancer, I was obliged to set mother wit to work to improvise a celebration of some description in honor of the day.

John went to his office after breakfast, and there was no time for me to lose after he had gone. I decided to make a cake, a New Year's pudding, and cook my nice turkey, which we had been fattening for a couple of weeks, and which was dressed and hung up in the carriage-house a week ago. There was no school, and the two older children could assist me, while the younger two would be useful in amusing the baby, a busy, active, two-year-old boy.

As soon as the breakfast things were cleared away and the beds made, I went again to the kitchen and left the children to put the sitting-room in order. I have taught them to sweep, by first wetting the broom and shaking or striking off the surplus water. In this way no dust rises, and the carpet looks bright and clean. If the room is large, the broom should be dampened several times.

Charlie pared and sliced six medium-sized Baldwin apples, one-third of which I placed on the bottom of a pudding pan, then scattered over a few slices of canned quince, some raisins, cut in two, a tablespoonful of raw rice, and two tablespoonfuls of sugar; this was one layer. Two more layers were made in the same manner, and at last a pinch of salt and a very little nutmeg were added. The pan was filled up with new, rich milk, and the whole baked slowly from two to three hours. It is a dish fit for a prince and perfectly healthful.

My cake was a medium-sized sponge cake, made from a tried recipe of my own. This is the recipe: Take one-third of a half pound ball of butter, two cups of light brown sugar, rolled fine and beaten with the butter. While I am doing this, Charlie beats the yolks of six eggs, which I add to the sugar and butter, and beat with a fork, while he beats the six whites to a stiff froth with the beater. It takes but a minute. Mix one spoonful of baking powder with two cups of flour, add half a cup of sweet milk, a little mace or lemon extract, and stir all lightly and quickly together. Pour into a baking pan that has a tube in the center, and bake as quickly as possible without burning.

One of the children chopped the bread for the dressing, and I seasoned and stuffed the turkey while the cake was baking. As soon as the cake came out of the oven the turkey went in. Then I took the whites of two eggs and made an icing for the cake, allowing nine teaspoonfuls of powdered sugar and one of corn starch to each egg, flavoring with extract of lemon. Two coats of the icing covered the cake nicely; I saved about a spoonful and colored it with a bit of cochineal the size of a pea, and wrote with a knife blade my husband's initials, and the date, with a dotted vine around the edge. The children gathered a few sprays of pine and some scarlet berries from the wild rose bushes, to put in the center, and it looked very pretty.

My good little Charlie dressed the potatoes and turnips, and Carrie set the table, placing Papa's cake in the center upon a tall, glass cake-plate, and a bouquet of evergreen and scarlet berries at either end. As soon as the potatoes were done I poured off the water, set them over the fire with the cover off a minute, then putting the turnips into a basin for Charlie to mash, I mashed the potatoes fine and quickly, seasoned with salt, butter, and cream, and then with a knife and spoon made them into oval shapes, dipped each one into batter made of egg-yolks and flour, with a bit of salt, and set them in the oven for ten minutes, when they came out a golden brown, delightful to look at and delicious to taste.

The children kept watch for Papa, so that I could have every thing in order at the right time. I changed my dress as soon as the turkey was put in, and wore an apron until just as the little waiters saw Papa coming up the steps. When he came in,

every thing was as it should be. The bird was a most perfect success; the potatoes looked almost too nice to eat; and the cake, with its crimson direction, "J. L., Jan. 1, 1869," could not be intended for anybody else. Papa was surprised and delighted. The children looked at each other across the table, radiant with the consciousness of having contributed to the general success of the festival, and I was more than repaid for my labor.



Fig. 1.—FRAME COVERED WITH IVY.

A Living Ornament—Ivy.

In the columns devoted to horticultural matters, the cultivation of Ivy, both in and out of doors, has been advocated more than once. It is one of the best plants to have in the house, as it bears a large amount of neglect and abuse, and gratefully repays good treatment. It is not rare to see a pot of Ivy placed where it can be trained around picture frames and thus border the picture with living green. One of our associates has hit upon a way of dispensing with the pot, or rather he has a substitute for it which is kept out of sight. Figure 1 shows a picture frame wreathed with Ivy after his method. Only a good-sized picture can be treated in this way, and as such pictures are usually hung so that the top of the frame leans forward, the



Fig. 2.

space between the frame and the wall is available for the receptacle for the plant. A pot or pan of zinc, of a wedge shape, and of a size to suit the space between the frame and the wall, as shown in figure 2, can be readily made by any tinsmith. This is to be hung against the wall so as to be quite concealed by the picture, and the Ivy tastefully trained over the frame. A rustic frame is better suited to this purpose, as it not only affords better facilities for attaching the stems of the plant, but its style seems better adapted to this kind of decoration than more pretentious ones. Still, a gilt frame may be beautified in the same way. Don't forget the water; the pan holding the plant is out of sight and therefore should be kept in mind. In summer the pan containing the plants may be hung up on the shady side of the house, or the plants may be turned out in the open ground. Ivy when planted out in the garden, if it is intended to repot it in autumn, should be kept tied up to a stake; if the branches are allowed to lie upon the ground they will take root at nearly

every joint. There is no plant easier to start from cuttings than Ivy, and none grows more readily if it has a good soil and does not suffer from dryness.

Household Talks.

BY AUNT HATTIE.

ROASTING MEAT.—Many persons seem to suppose that it is an indifferent matter whether meat is cooked for a short or a long time, provided only that it is cooked enough. I have often seen them place the meat for dinner in the oven as early as nine o'clock, making no distinction between beef, mutton, lamb, pork, chicken, goose, or duck, or three pounds, seven, or fifteen. They rightly consider that it is not necessary to watch it, for a generous supply of water in the pan effectually prevents its burning. Now, there is as much difference between a piece of well-cooked or badly cooked meat, as between a loaf of good bread or bad bread, and perhaps more. Meat of mature (and by mature I do not mean old) animals, such as beef and mutton, requires less time to cook than meat from immature animals, such as lamb and veal, which needs thorough cooking. The reverse is the case with poultry; all young poultry, such as spring chickens, young ducks, and green geese, take far less time than tough old fellows that can stand any amount of fire. Pork should always be well done. These few hints I throw out as a sort of key to the methods of roasting that I am about to give you. Another thing, mature meat should never be put into the oven until the latter is very hot, in order that the intense heat may quickly sear or shrivel the surface of the meat, which will prevent the juice from escaping. Never stick a fork or skewer into a joint of meat while it is cooking, as the gravy will ooze out. It is obvious that where water is put into the pan, this quick searing of the surface cannot be effected. I think if advocates for water as an element in roasting would consider that it cannot be raised above a certain temperature, (its boiling point,) and that fat is susceptible of a much greater degree of heat, their scruples against grease as a basting agent would be removed.

ROAST BEEF.—A piece of beef to roast for my table must come from the sirloin or first or second cut. The third cut is near the shoulder, and is not as good as the others. A small portion of the shoulder-blade is taken with the third cut, which the butcher removes, and in its place neatly inserts a piece of fat, thereby deceiving the initiated; but it makes a poor roast. Epicures require that beef and mutton should be cooked rare. There is a great difference between raw and rare meat; raw meat inside of a roast will have a dark purplish color, while rare meat is of a delicate crimson. The plates should be very warm when rare meat is served. Allow no flour or fat in the gravy. Carrots chopped fine, turnips mashed, and whole potatoes and cabbage, are excellent with roast beef. I never mash potatoes for hot roast beef or mutton.

ROAST VEAL.—A loin of veal should be thoroughly cooked; a large piece will require three hours in a moderate oven. I should not put water in the pan for veal; a few slices of salt pork placed upon the top will improve the flavor, and will also serve to moisten or baste it.

FILLET OF VEAL.—This is cut from the thick part of the leg. Insert into the opening a stuffing made of crumbs of bread seasoned with summer savory, pepper, and salt, and a little lemon juice, if convenient; tie around with a string, making the piece the shape of a small cheese. Never use sage or onions with delicate meat like veal. Roast thoroughly; make a brown gravy by adding flour and water to the exuded juice in the pan; serve with slices of lemon, and fried or boiled pork. The loin should be served also with pork and lemon, and flour should always be added to the gravy.

LAMB should be thoroughly cooked, but will require less time than veal or pork; when of a fine brown on all sides, you may conclude that it is done. Serve with mint sauce, made as follows: To one dozen leaves of spearmint chopped to a pulp, add two tablespoonfuls of sugar and a half teacup

of sharp vinegar. Lamb and green peas is the rule, but any vegetable nicely served will be acceptable.

MEAT FOR CHILDREN.—Many persons consider meat injurious to children, but I allow my children a little beef or mutton whenever we have it for dinner, which is about four times a week; even the baby must have a piece as large as a finger, from which he pretty effectually extracts the juice. While I consider that meat in moderate quantities gives tone and vigor to the constitution, its indiscriminate use by children should be forbidden. My mother always gave her children milk and bread for breakfast, and bread and butter for tea. I reverse that order, giving them a few warmed-up potatoes, and bread and butter for breakfast, with a bowl of milk and bread for supper. They are at table at breakfast and dinner, but not at tea.

VEAL PIE.—Take a deep baking-dish, and place some small pieces of veal in it, allowing any little bones to remain. The neck pieces may be used if desired. Nearly cover with water, and sprinkle with salt and pepper, adding little bits of butter. Cover with a paste, and bake. When the crust is done, open the oven door and let the pie remain an hour or more, to cook the meat. Is delicious eaten cold.

MINCED VEAL OR HASH.—Take any cold veal which may be left from the roast, and cut up into very small pieces, but do not chop; cover with water, adding a little pepper, salt, and butter; bring to a boil, and thicken with a teaspoonful of flour. Toast a few slices of bread freed from crust, butter and place them around the dish, and pour the mince nicely in the center. It is a most acceptable dish.

RAISED DUMPLINGS.—Edward is very fond of dumplings made of dough, and we often have them. I reserve a small quantity of dough from the bread pan and place in the pantry until about an hour before dinner, when I make them of a round shape, and about as large as an orange, and set to rise. When light, I drop them into a pot of boiling water, cook until done, and serve with drawn butter sauce and syrup, or sugar. I consider this an agreeable and wholesome dessert.

APPLE DUMPLINGS.—Take one apple pared and cored, surround it with a very thin paste; tie separately in a clean cloth and boil for 40 minutes.

AUNT HATTIE ON THE BREAD QUESTION.—I hardly know whether I was amused or annoyed the most at Miss —, on Tuesday evening. She called with a young gentleman to whom rumor says she is engaged to be married. The truth of this report, for his sake, I hope is unfounded. As they had had a long walk—nearly a mile and a half—I thought an evening luncheon would be just the thing. Edward had gone to a trustee meeting, and Bridget also was out, so I went myself to the pantry to prepare a lunch. I covered a large tray with a napkin, and placed on it some cold meat, knives and forks, plates, etc., some little patty-pan mince pies, and a loaf of bread uncut, and carried it into the sitting-room, because they seemed to enjoy so much the cheerful, open fireplace. Mr. B. cut a little of the meat for each, and before he was quite through doing so, the young lady asked him if he would also cut some of the bread. "You know," she added, "I never cut bread." I felt surprised, as I knew that she was the oldest of several children, and that they were often without a girl, and while I cut some of the bread, for I had risen to do so, I expressed aloud my astonishment and incredulity. "Why," she said, laughing, "I never cut a slice of bread in my life.".... "Is it possible?" I said.... "Not only possible, but a fact; I never cut a slice of bread nor part of a slice in my life.".... "Who cuts bread for the children and for the family?".... "Oh, the girl, always.".... "But she is away sometimes, and at times you have none.".... "Well, mother is always at home, and then she does it; she does not care how her hands look.".... "Then you cannot make bread?" I said, hesitatingly. A little light, rippling laugh, and an amused and significant glance passing between the two was all the answer I received, but I read plainly that she considered bread-making and bread-cutting as arts belonging to old women, mothers, and mortals less refined than she. Ah, well! she may laugh now, and he

may laugh with her and admire her delicate hands, but by and by, when they are older, when mother is gone, and the strain of life comes on, and perhaps adversity sets in, when servants are scarce, and impudent, and ignorant,—what think you? will he laugh then when sour, heavy, clammy, half-baked bread is presented? Will he cut the loaf then for her and the children? Speaking not from experience but from observation, I can but say no, but I can assure them that dark looks, angry frowns, and unpleasant words, often arise from nothing more serious than sour, bad bread.

The Table—Order and Ornament.

Last month a neat way of setting a family table was given, and we proposed to follow it with some hints upon serving the food. Soup was provided for with the hope that this excellent form of food might become more popular than it now is. Soup ought not to be too hot when served; it should be just at that temperature at which it can be eaten without inconvenience. In eating soup, the side of the spoon should be used; it will sometimes be necessary to use the end of the spoon if the soup contains bits of meat or vegetables, but it is better to avoid it as far as may be. The waiter should remove the soup plates when all are done, and if there is no waiter it should be the business of some member of the family to rise and take them away quietly, and bring the meat and place it before the head of the family. The vegetables, if in covered dishes, may be placed on with the soup; otherwise they must be brought in with the meat. A good carver will know the tastes of all who sit regularly at the table, and serve them accordingly as far as may be; he will ask the preferences of a guest, as to rare or well done, fat or lean, etc. He will not serve gravy without first learning if it is acceptable. Where no waiter is at hand to pass the dishes, each one should contribute to the general comfort by promptly passing plates, helping those vegetables that may be nearest, etc. Where the table is waited upon, the vegetables, in some families, are passed for each person to help himself, and in others the waiter takes the plate and procures those which are desired. Individual deportment has much to do with the general enjoyment of a meal, and a word on this may not be out of place. Some time ago we read in a Western paper an injunction not to pick the teeth with the fork. We wondered what kind of readers the writer could be addressing, but since then we have actually seen it done. We do not think it necessary to repeat this injunction, but there is a use of the knife which we may allude to. It is not considered the proper thing to carry food to the mouth with the knife. The knife is for cutting, and the fork is the proper implement to use in taking the food. We have heard it said that no one who eats with his knife can be a gentleman, which is all nonsense, it being moral qualities which make a *gentle* man, and not forms, which are matters of early education. Still we say to those who wish to conform to the best usages, eat with the fork instead of the knife. One's own knife should not be put into the butter or salt, unless in cases where butter-knives and salt-spoons are not provided. At table where it is necessary to help one another, one should not be so absorbed in his own eating as not to observe what is going on and be ready at the right moment to supply such things near him as may be needed. When through eating lay the knife and fork side by side upon the plate; do not cross them, nor push the plate from you.

Boxes for Boots and Shoes.—"Genesee" says: "Will some kind reader who is not fortunate enough to live in a 'mansion,' tell me how to put away boots and shoes to make them look orderly and in place? Having two or three children with their 'Sunday,' 'Monday,' and over-shoes, besides my own and husband's, it becomes quite an item, at least to me."—Lack of sufficient and proper closet room is as much felt by those who live in "mansions" as by dwellers in humbler houses; it is a striking fault of the great majority

of house plans. A friend of ours proposed to his wife to make the apple pies in a pitcher, so that he could get plenty of apple with his crust. With something the same feeling we sometimes wish for a house in which the closets bear about the same proportion to the other rooms as would the apple have borne to the crust in our friend's pie. The best remedy we can suggest to "Genesee" is to make some shoe boxes. Get packing boxes of convenient size and of a light suitable for a low seat; hinge the cover so that it will open readily—leather hinges will do—then cover the sides with chintz or other material tacked on. Make a thin cushion and fasten it to the lid, and put around the edges of the lid a narrow flounce or fringe; this will quite conceal the box and with a little taste the whole may be made a very pretty ottoman. A box of this kind is a neat and most useful piece of bed-room furniture, for besides keeping boots and shoes in order and out of sight, it serves as a convenient place on which to sit while dressing the feet.

Indefiniteness in Recipes.

Ability to teach others what one perfectly understands himself or herself is a rare accomplishment. If you doubt it, ask your boy or girl, who knows every inch of the road, the way to Neighbor B's. Many hundreds of recipes come to us in the course of a year, some of which we use, some are omitted because an important article is quite forgotten, and others are not used, for the reason that though everything may be enumerated we are not told what to do with the mixture when we have all the ingredients together. As an example of indefiniteness, and not by any means a bad one, we give the following. We trust the lady who sent it will forgive the use we make of her recipe, as we can assure her that the selection was entirely accidental.

Apple Tea-cake.—Four apples pared and cut in quarters, 1 egg, 1 cup of sugar, 1 cup of milk, 4 cups of flour. Stir the apples in the batter the last thing; 1 teaspoonful cream of tartar, $\frac{1}{2}$ of soda."

Now this is commendable, inasmuch as it enumerates at the outset all the things required, except the cream of tartar and soda, but is faulty in its directions. We suppose that a batter is to be made with the flour, sugar, egg, and milk; we are directed to stir in the apples the last thing, and then comes soda and cream of tartar, which are probably intended to be the very last things. What is to be done with the mixture we are not told. "Any body would know it was to be baked." The probabilities are that it should be, but as we have recipes for bread that is to be boiled several hours in a kettle, and other things where the compound is to be steamed, it is just as well to say so. In writing a recipe or giving a direction of any kind it is the best way to assume that the person to whom it is addressed has no knowledge whatever on the subject. It is seldom that directions are too explicit, and it is much easier for us to cut out such as may be superfluous than it is to supply omissions.

Tin and Britannia Ware.—A correspondent says: "No dishes fare harder at the hands of the inexperienced housekeeper, or careless help, than tin dishes. Though sooner tarnished than china by cold, greasy, dish-water, they are usually left the last on the list to be washed, are but partially dried, and, as a consequence, soon become dull and rusty. Then when the "clearing-up time" comes, they are scoured with ashes or sand, taking off in the process the outer coat of tin, and very soon look worse than before. Let me give a better way. Rub the dish thoroughly with soft soap, wash in hot, clean suds, and rinse with boiling water, dry with a clean towel, and there will be no occasion for scouring. This is equally good treatment for articles of white metal or Britannia Ware."

Eye Drop Cakes.—By M. E. E.—1 pint of milk, 3 eggs, one tablespoonful of sugar, a little salt. Stir in sifted rye until of about the consistency of pancakes. Bake in buttered cups one half hour.

BOYS & GIRLS' COLUMNS.

The Improvement Circle.

It is hard, dry work for most boys and girls to get knowledge from books. This is not surprising. Young people are too full of life to sit still long at a time, and besides this most books impart instruction in a very uninteresting way. Facts, packed away in leaves, are like dried fruit - it is much pleasanter to gather either fruit or knowledge fresh from nature. For example, you may read how each seed contains a young plant in itself, which grows larger and multiplies its different parts, when properly placed in the soil; but how much more interesting to take a seed, carefully cut it open, and find the plant! Then to take others and examine them day after day in their different stages of growth! Every day would show a fresh wonder, to brighten the eyes of the young student. So of any other facts in every branch of knowledge. The careful observer will also soon become so interested that he will be pleased with books which tell him more than he has been able to discover himself. Now suppose a dozen, more or less, boys and girls of any neighborhood should unite into a circle to gain knowledge. They should first agree to be governed by the wishes of the majority and then select some one subject for their studies. We will suppose they agree first to learn what they can about the plants growing in their neighborhood, which would be a very pleasant and profitable topic. The special question first taken up might be, How many different kinds of plants can be found within a certain district? A week might be taken to gain information on this point. Then you may be sure there would be twelve pairs of eyes looking more sharply at plants than ever before. Every hedge-row would be searched and every nook and corner closely examined, for with commendable rivalry each would try to secure the largest number of specimens. When they met to compare notes, all duplicates would be thrown out, the remainder counted, and examined by all. Thus each member of the circle would have the benefit of twelve pairs of eyes and hands instead of one, and might be able to learn almost twelve times as much as though working alone, besides having the added pleasure which agreeable union brings. The next week new specimens might be looked for, and when no more could be found, each member might be requested to find out all the facts possible about some one plant, for instance the potato. Then one would perhaps be led to study the leaf, another the stem, another the root, etc., and all would be surprised to see how many new things would be learned, and learned in such a way as not to be forgotten. This is but an example of what might be accomplished. The insects, the birds, stones, clouds, weather, sun, moon, and stars, history, geography, philosophy, - in short, the whole round of knowledge - will furnish an inexhaustible fund for most pleasurable and profitable study. Who will have the honor of forming Circle No. 1, and send an account of its first and second meetings? Perhaps they would be interesting enough to publish for the emulation of others. Many parents and teachers to whom this plan is mentioned will be able to give valuable suggestions to the young students, but they should be left mostly to themselves, carefully guided, but not discouraged by offering too much advice and help.

The World Not Finished.

The first inhabitants of the earth would hardly know their old home, should they now revisit it. Changes have been going on in every part; mountains have been lowered in some places, and lifted up in others; great lakes and rivers have disappeared; the plants of different sections are not the same as formerly; old breeds of animals are gone and new ones have appeared, and everywhere the great work of improving and finishing the world is going on. Every summer's sun and winter's frost does something to change the face of nature; rocks crumble little by little, are washed down the hill-sides, and help to fill the valleys. The streams are wearing away their banks and carrying earth, to deposit it in new places. The ocean slowly advances on some coasts and retires from others. Now and then a volcano or an earthquake in a few hours sweeps away all old landmarks, and a large district is thus at once made over. Equally great changes are going on among men, in their appearance, habits, customs, laws, and character. Whole races have passed away and left only here and there a mark to show that they existed, and new nations are coming forward to rule the progress of the world. It is remarkable that in all these particulars there is, on the whole, manifest improvement. Nature and men are less fierce than formerly. The ages of fearful monsters and ferocious nations have nearly passed. Peace, order, beauty, and happiness, are gradually advancing: the world is being finished by its Great Creator. The six days' work in the beginning, described in the Bible, was merely the bring-

ing together of the materials and putting them together roughly. The adjusting and polishing have yet to be completed. All have a part to do in the great work. The sunbeam that enlivens a little plant by the wayside helps make the world better; the boy or girl who lives right is like a whole sun scattering light on every hand, and will as surely do his or her work in society, as the rays of the natural sun perform their appointed part. Let's all take hold and try to finish up the world by making somebody better.

A Pleasing Home Game.

Our young folks, including the writer, have passed many a pleasant evening hour playing a new game called "Squalls." It is for sale at toy and stationary stores, but almost any one can make the necessary parts. A small block of lead, say half an inch in diameter and of the same height, is placed on the center of a smooth table; this is the target. The squalls, sixteen or more round, flat, and smooth pieces of hard wood about two inches in diameter, are distributed among the players. These pieces should be differently colored or numbered, so as to distinguish those belonging to each player, there being four of each color or number. In case these can not be easily procured, large, flat overcoat buttons of wood or metal will answer very well. The players are seated, and each in turn places a squall on the edge of the table, projecting a little over the edge, and with the hand gives it a slight blow or snaps it with his finger, to drive it as near as possible to the target. When all the squalls are played, the one remaining nearest the target counts one for its player; if he have been skillful or fortunate enough to leave two or more squalls nearer the target than those of any other player, each squall counts one, in the same way as in pitching quoits. He who thus counts seven, nine, or any other number decided upon, wins the game. The first play is made in rotation from right to left. A good part of the fun is the uncertainty until the last squall is played. A skillful shot by the last player may drive away one or more well-placed squalls, and gain the victory. If the target is driven out of place, it is to be played at where it lies. Any squall driven more than three inches upon the table can not be taken back until the end of the game.

Whiskey vs. Brains.

The "Southern Son" relates that a temperance lecturer gave the following hard hit at "moderate drinkers": - "All who in youth acquire a habit of drinking whiskey, at forty years of age will be total abstainers or drunkards. No one can use whiskey for years with moderation. If there is a person in this audience whose experience disputes this, let him make it known and I will account for it, or acknowledge that I am mistaken." A tall, large man arose, and folding his arms across his breast, said: "I offer myself as one whose own experience contradicts your statement." "Are you a moderate drinker?" asked the Judge. "I am." "How long have you drank in moderation?" "Forty years." "And were you never intoxicated?" "Never." "Well," remarked the Judge, scanning his subject closely from head to foot, "yours is a singular case, yet I think it easily accounted for. I am reminded by it of a little story: A colored man, with a loaf of bread and a bottle of whiskey, sat down on the bank of a clear stream to dine. In breaking the bread he dropped some of the crumbs into the water. These were eagerly seized and eaten by the fish. That circumstance suggested to the negro the idea of dipping the bread into the whiskey and feeding it to them. He tried it. It worked well. Some of the fish ate of it, became drunk, and floated helplessly on the surface. In this way he easily caught a large number. But in the stream was a large fish, very unlike the rest. It partook freely of the bread and whiskey, with no perceptible effect. It was shy of every effort of the negro to take it. He resolved to have it at all hazards, that he might learn its name and nature. He procured a net, and after much effort caught it, carried it to a colored neighbor, and asked his opinion in the matter. The other surveyed the wonder a moment, and then said: 'Sambo, I understand dis case. Dis fish is a mullet head; it ain't got any brains!' 'In other words,' added the judge, "alcohol affects only the brains, and of course those having none may drink without injury." The storm of laughter which followed drove the "moderate drinker" suddenly from the house.

Spacious Cottage.-A real estate agent informs the public "that he has a beautiful cottage for sale, containing ten rooms and an acre of land."

Stunning Farewell.-A Connecticut editor gives an account of a man who blew out his brains after bidding his wife good-by with a shot gun.

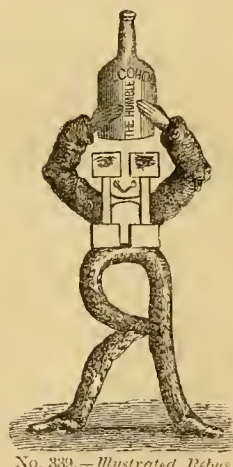
Conundrum.-When does a man have a vegetable time-piece? *Answer.*-When he gets a potato clock, (gets up at eight o'clock).



A Picture Story.-Write it out yourself.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the February number, page 63... No. 337. *Arithmetical Problem.*-A pays 43 16, and B, 311-16 cents per pound... No. 338. *Illustrated Rebus.*-A circle of pictures appears, in which are exhibited five pairs of ewes. Though their tenor you can not entirely foresee, perseverance, I fancy, will give you the key. In justice to our young readers we state that through an error of the draughtsman, the ewe in the first circle should be an ewer... The following have sent in correct answers to some of the puzzles recently published: Frank L. Whitcomb, "N. N. M.," Fidelity R. Lord, Sallie Work, N. Jennie Fain, Julia M. Rowley, Robert Simpson, John M. Cotton, M. Rutter, H. Ague, "Charlie P.," Wesley T. Jolly, A. Berdan, George A. Fuller, James Vandemark, Carrie Nell Smith, John H. Halleck, Aaron H. Manderbach, T. T. Kerr, Edwin C. Brady, Frank Lockwood, "Carrie, Jr."





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UNSEEN DANGERS.—DRAWN BY JAMES BAIRD.—Engraved for the American Agriculturist.

"I'm tired enough of this humdrum life!" sighed Mrs. Drake as she waddled disconsolately about the yard, followed by her young brood. "Here I've been shut up these six weeks in the company of vulgar chickens, with nothing but a puddle to swim in, and I can see that my darlings are getting the hateful ways of the low young ones they have to associate with. Oh, that I could escape to the lake where we used to have such glorious parties, and where I first became acquainted with Mr. Drake!" "It is awful!" echoed Mr. Drake, who stood mooping near by. "Here I have my new spring snit all finished, but it's no use, there's no society here." Just then a crash was heard, and part of the poultry-yard fence came tumbling down, where two oxen fighting had crowded against it. "Quack! quack!" shouted Mr. Drake in triumph, as he hastened away through the opening, quickly followed by his whole family. Straight they steered for the well-known lake, which they soon reached, joyous in the prospect of enjoying the world again, as they had done before family cares and the prudence of their owner had kept them in narrower bounds. "I wonder what we shall have for breakfast this morning," said a hungry young pike who was darting restlessly about among the lily stems. "I'm hungry enough to swallow a catfish if I could catch him." "Catfish be hooked!" growled out a snapping turtle that was burrowing in the mud below, hunting for worms. "It's 'most time for young ducks. What a feast I had last year! ah, it makes my mouth water to think of it!" Proudly Mrs. Drake sailed upon the water, followed by her brood, while Mr. Drake proudly stood upon the bank admiring his prodigies. "How well they dive!" thought he. "How long they stay under! They're just like their father for all the world! They'll surely make a sensation in society when they are educated." Now you can finish the story

by looking at the picture, and see how restlessness and vanity brought ruin to a family. This will be a much pleasanter way to learn the lesson, than to be dragged out into society as some children are by their vain parents and exposed to the hungry fish, always on the lookout for prey, that frequent its treacherous depths.

A Costly Table.

A traveler in Italy relates that he saw a table valued at two hundred thousand dollars. It was less than six feet in diameter, but had required the work of a large number of men for fifteen years. It was ornamented with mosaic work, that is, stones of different colors and shades matched together so as to form various pictures. The traveler says: "Upon entering the hall where this kind of work is done, I could not doubt these enormous figures. Suppose, for instance, a thousand of the hardest and most expensive stones which will take on a high polish, to be cut into pieces three-eighths of an inch thick. These pieces are cut the other way into small pieces like shoe pegs, and where the shading from one color to another is sudden, these pegs must not be larger than a needle. Now the artist cuts and puts in these, selected according to their color, so as to give the coloring wanted as distinct as though painted. These pieces or pegs must be fitted so closely that lines of separation will not show, and set upon end, side by side, like types. They claim that ten thousand different shades of color are necessary; and in order to do this kind of work a man must be skilled in colors and shades as a painter, in order to place the colors properly, and then be the most careful and accurate of mechanics, in order to fit the pieces; and he must have patience enough to work on cheap pictures one year, and on a fine one, from ten to twenty years."

Curious Dreams.

A writer in the "Argos" says: "I remember, when a boy, sleeping in a strange house, in an old-fashioned room, with an oaken store cupboard over the bed. I dreamed that I was being murdered; the assassin struck me on the head, and I awoke with a sense of pain in that region. Putting my hand to my forehead, I found it sticky—with blood! I felt almost too ill to cry for help; but at length I alarmed the household, and, on procuring a light, it was discovered that some jam had leaked through the bottom of the cupboard, and fallen upon my head in a small sluggish stream. A few months ago, shortly before going to bed, a friend had been discussing with me the peculiar instincts of animals, and more particularly their sense of the coming on of storms. After this he dreamed he was a Worcestershire Short-horn, grazing in a pleasant meadow on the Herefordshire side of the Malvern Hills. He had a number of companions. Signs of a storm appeared in the sky; a misty vapor hung on the well-known beacon. He remembered distinctly, although he was a cow, watching, with a sense of great delight, the heauty of the preliminary tokens of the storm. With the other cows he quietly strolled toward the shelter of an adjacent tree, and waited until the storm should break. He distinctly remembered wagging his tail." One of the editors of this paper, while traveling some time since, dreamed that he was an advertisement, for which there was no room in the paper, and was made very uncomfortable by the effort to crowd him into a column. On awaking he found himself inconveniently crowded in the berth which he was sharing with his son.

Many troubles, like waves of the ocean, will, if we wait calmly, only break at our feet and disappear.

"OUR YOUNG FOLKS."

AN ILLUSTRATED MONTHLY MAGAZINE
FOR
BOYS AND GIRLS.

The January and February numbers of "OUR YOUNG FOLKS" have been commended by the Press in the most enthusiastic terms. Its Stories, by MR. ALDRICH, MRS. STOWE, MRS. DIAZ, SOPHIE MAY, "AUNT FANNY;" its Poems, by LUCY LARCOM, HARRIET PRESCOTT SPOFFORD, MISS MULLOCK, and C. A. BARRY; MR. TROWBRIDGE'S graphic and instructive description of Glass-Making; MR. PARTON'S interesting account of the Invention of the Compass; and MRS. AGASSIZ'S attractive opening paper of her series about "The World we Live on"—all these are recognized as giving to the Magazine in due proportion the two essential qualities of healthful entertainment and practical value; and as having such variety of character, such literary excellence, and so high a moral tone, as to make the Magazine all that can reasonably be demanded.

"The Story of a Bad Boy," by T. B. ALDRICH, has excited general attention, by its genuineness, its graphic delineations of boy character, and the sustained interest of the incidents. In the February number of the Agriculturist, the opening chapter was given.

As illustrating the great interest that has been manifested by the readers of this Story, and MR. TROWBRIDGE'S excellent articles, we copy from Our Letter Box in the March number of "OUR YOUNG FOLKS" the following extract.

We print this little note just as it came to us, because it is a specimen of many which testify to the growing interest in our Magazine, and because it contains a question about one of our most valuable contributors.

"DEAR YOUNG FOLKS:

"Papa made Jamie and me a Christmas present of 'Our Young Folks' for 1869; and as we have the January and February numbers, we want to tell you how delighted we are with our Magazine.

"I like to read Mr. Trowbridge's pieces on Glass-Making, because I have often wondered how glass was made, and I never could understand how they could use potash and sand in making it, as I have been told they did.

"Jamie thinks Tom Bailey is going to be the right sort of a boy after all, and I like to read about such a boy, too. Jamie is 12 and I am 14.

"Jamie wants me to ask who Mr. Aldrich is, and if he is Tom Bailey; and where Ilvermouth is. We can't find it at all, and we have looked on our map all along the coast of Massachusetts."

We thank our little friend for her kind words, and we are gratified to know that she is pleased with the stories she mentions.

When Mr. Trowbridge comes to speak of Coal-Mining and Ship-Building, we have no doubt that she and many

besides will be as much interested as they have been in Glass-Making. Before preparing his papers on Coal-Mining, which are soon to appear, he visited the coal regions of Pennsylvania, and saw the miners at their work. In describing the manner of carrying on this great business he will have much to tell about these miners, and the little "slate pickers," and the cats and rats in the mines, and other curious and interesting things.

But about Mr. Aldrich and his story,—Well, Mr. Aldrich is widely known as a poet. Those who do not own the dainty blue-and-gold volume of his poems may yet remember the graceful sweetness of his "Bible Bell," which so delighted children and grown-up people a few years since. He writes prose sketches, as well as poems, for the "Atlantic." "A Young Desperado," published in that Magazine for December, 1857, is probably not unknown to some of our readers. Mr. Aldrich is also the Editor of "Every Saturday."

In proposing to write a story for "Our Young Folks," he said he wanted to give the history of a real, natural boy, such as all wide-awake, hearty boys are, everywhere, and asked if he could have the liberty of doing so. He was assured that he could.

"Well," said Mr. Aldrich, "such a story as I have in mind will be an honest one, but do you think it will do to publish?" "Why not?" he was asked. "Because the boy

I am thinking of is not what is called a good boy. He is full of mischief and fond of fun; and, what is worse, perhaps he will fight, if it is necessary for him to fight. On the other hand, he is generous and honest, and won't do a mean thing. And" said he, "I don't think such boys are fully appreciated."

The Editors, bearing in mind the thousands of brave, generous boys who constantly read this Magazine,—boys not impossibly faultless, but who hate meanness as thoroughly as they love fun,—replied, "It is just the story we want."

"Very well," said Mr. Aldrich, "you shall have it on this condition, that you call it 'The Story of a Bad Boy'; for I don't wish any one to read it under false impressions."

So you see, dear young folks, why Tom Bailey is called a bad boy.

We don't wonder that many of our friends have hunted over their maps in vain for Ilvermouth. It would be hardly fair play on our part to tell the reader what town is really meant by Ilvermouth. It may be Lynn, or Portsmouth, or Newburyport,—our correspondent "Edgar" positively declares it is Salem,—but we are not going to settle the question. Every boy or girl who knows anything of our New England coast will see at a glance that Ilvermouth is a faithful picture of a real seaport town, and that must suffice for the present.

The March number of "OUR YOUNG FOLKS," in addition to the "Story of a Bad Boy," has a very interesting article by MR. TROWBRIDGE on Glass-Cutting and Ornamenting; The Physical History of Florida, by MRS. PROFESSOR AGASSIZ, showing how Florida was built by Coral Insects; MR. PARTON'S account of Who First Used the Mariner's Compass; an exceedingly valuable article, How to Talk, by EDWARD EVERETT HALE, pointing out the errors of conversation into which young persons are most likely to fall, and telling in his fascinating way how all may learn to talk well; the ninth packet of the charming William Henry Letters, by MRS. A. M. DIAZ; a spirited declamation, Hannibal at the Altar, by ELIJAH KELLOGG; and other attractive and valuable articles, all copiously illustrated by the best artists.

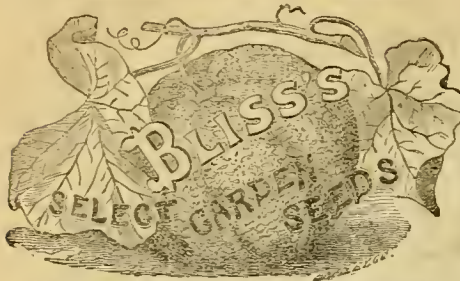
TERMS: \$2.00 a year, in advance; 3 copies, \$5; 5 copies \$8; 10 copies, \$15; and \$1.50 for each additional copy.

A copy of "OUR YOUNG FOLKS" for the first four months of 1869 will be sent free to any one who wishes to examine the Magazine, on application to the Publishers,

FIELDS, OSGOOD & CO.,

(Successors to Ticknor & Fields,)

124 Tremont Street, Boston.



B. K. BLISS & SON,

Nos. 41 Park Row & 151 Nassau Sts., New York, (Formerly of Springfield, Mass.)

Importers, Growers and Dealers in Garden, Field, and Flower Seeds, Horticultural Implements and Garden Requisites.

World invite the attention of all who are interested in the culture of Flowers and Vegetables, to their large and well-selected assortment of the above, comprising the newest and most approved varieties, both of European and home production, the quality and utility of which cannot be surpassed. For a list of these see their

NEW ILLUSTRATED SEED CATALOGUE, AND GUIDE TO THE FLOWER AND KITCHEN GARDEN.

The Fifteenth Annual Edition, enlarged and improved, contains 132 pages of closely printed matter, beautifully illustrated with 100 Engravings, and a descriptive list of 2,500 varieties of Flowers, Vegetables, and Agricultural Seeds, including all the novelties of the past season, with explicit directions for their culture; also, a list of 125 varieties of French Hybrid Gladioli, embracing many new sorts now offered for the first time in this country—with many other Summer Flowering Bulbs, consisting of *Amaryllis*, *Tuberose*, *Turkey*, *Lily*, etc.; with much other useful information upon the subject of gardening generally. A copy will be mailed to all applicants upon receipt of 25 Cents. Our regular customers supplied without charge.

Bliss' Gardeners' Almanac for 1869

Contains 68 pages of closely printed matter, embracing a Monthly Calendar of operations, and a priced list of the best varieties of Garden, Field, and Flower Seeds, with brief directions for their cultivation. A copy will be mailed to all applicants enclosing a three cent stamp.

Seeds for the Farm & Garden.

Table listing various seeds and plants with prices. Includes items like Beans, Cattle Flower, Celery, Corn, Egg Plant, Lettuce, Parsnip, Peas, Peppers, Radish, Squash, Turnip, etc.

New and Choice Potatoes.

CLIMAX.

The CLIMAX is a seedling of the Early Goodrich, and is thus described by the raiser:

"It has a stout, erect stalk, large leaves; tuber, about medium size, smooth, cylindrical form, swelled out at center; eyes, shallow, but strongly defined; skin, considerably netted or russet, tough, white; flesh, entirely white, solid heavy, brittle, and never hollow; boils through quickly, with no hard core at center, is mealy, of floury whiteness, and of superior table quality. It is equally productive with the Early Rose, but a few days later, earlier than the Early Goodrich, while its keeping qualities are as good as the Peachblows." Price \$3.00 per pound, by mail, post-paid.

BRESEE'S PROLIFIC (or No. 2).

This remarkable variety originated with Albert Breesee, who was also the originator of the justly celebrated Early Rose, both varieties being produced from the same Seed ball of the Garnet Chili.

The vines of Breesee's Prolific are of medium height, quite bushy, somewhat spreading, large leaves. Tubers, large, round in shape, and very smooth, slightly oblong, somewhat flattened. Skin, dull white, inclined to be russeted; eyes, but little depressed and slightly pinkish; flesh, white; cooks quickly, is very mealy, and of excellent quality, yield very large, often exceeding One Hundred fold, matures about three weeks later than the Early Rose, and will prove a most valuable variety for field culture. A silver medal was awarded to this variety at the annual exhibition of the Mass. Hort. Society, last September. Price \$3.00 per pound by mail, post-paid.

EARLY ROSE.

Among the many thousands of our patrons to whom we furnished this valuable Potato last spring, we have yet to hear from the first one who is not fully satisfied with his purchase. The only regret expressed is that they had not procured more. We are daily in receipt of the most flattering testimonials, not only of its earliness and good quality, but of its astonishing productiveness, some of which seem almost fabulous. Several reports of having grown a barrel from a single pound; a yield of one hundred fold is an every-day occurrence. The following well-known gentlemen have given their unqualified approval, and endorse it as the best, most productive, and earliest variety in cultivation: Hon. Marshall P. Wilder, Chas. Downing, Esq., Rev. Henry Ward Beecher, Fearful Burr, Esq., Dr. J. G. Holland, (Timothy Titcomb), and many other prominent agriculturists, horticulturists, and market gardeners. We shall continue to execute cash orders through the month of February at the following prices:

One pound, \$1.00; Three pounds, \$3.00, by mail, post-paid. One peck, (15 lbs.), \$5.00; 1/2 bush, \$8.00; 1 bush, (60 lbs.), \$15.00; 1 bbl., (65 lbs.) \$10.00. Prices to the trade, in larger quantities, will be given upon application. The freight on all packages by express, boat, or railroad, to be paid by the purchaser. No charge for packages or cartage.

Upon receipt of \$5.00 we will mail, post-paid, to any address in the United States or British Provinces, by Express, each of the CLIMAX, BRESEE'S PROLIFIC, and the EARLY ROSE. Orders will be booked in the order in which they are received, and the potatoes forwarded on and after April first, when they will be free from danger of frost. No orders will be accepted unless accompanied with the cash.

In addition to the above, we have a large stock of EARLY SEED, EARLY GARDEN, and EARLY MARKET, such as EARLY WHITE, EARLY HARRISON, &c., &c., which we offer at the lowest market prices.

Our descriptive and illustrated priced list of potatoes mailed to all applicants.

B. K. BLISS & SON, 41 Park Row and 151 Nassau-st., New York. (P. O. Box 5,712.) Formerly of Springfield, Mass.

Collections of Flower Seeds by Mail.

The following collections have been sent out from our establishment for the past 15 years, and are now favorably known in every section of the country. They contain the most showy varieties in our large assortment, with full directions for culture. Each packet contains a mixture of the different colors and varieties of its species, so that a greater display can be made at a much less price than when ordered in separate packets. Those unacquainted with Flowers, as well as the experienced cultivator, may order without fear of disappointment.

- No. 1—contains twenty choice varieties of Annuals, \$1.00
- No. 2—contains twenty choice varieties of Biennials and Perennials, \$1.00
- No. 3—contains ten extra varieties of Annuals and Perennials, embracing many of the new and choicest in cultivation, \$1.00
- No. 4—contains five very choice varieties, selected from Prize Flowers, of English Pansies, German Carnation and Picotee Pinks, Verbeas, Truffant's French Asters, Double Hollyhocks, \$1.00
- Any one remitting \$3.00 will receive the four assortments, postage free.
- No. 5—contains fifteen very select varieties of Green-house Seeds, \$3.00
- No. 6—contains one hundred varieties of Annuals, Biennials and Perennials, including many new and choice varieties, \$5.00
- No. 7—contains fifty varieties of Annuals, Biennials and Perennials, \$2.50
- No. 8—contains twenty varieties of hardy Annuals, Biennials and Perennials, for sowing in Autumn, \$1.00

The seeds contained in the above assortments are of our own selection. Purchasers who prefer to make their selection from the Catalogue will be entitled to a discount proportionate to the quantity ordered.

B. K. BLISS & SON, Box 5,712, 41 Park Row & 151 Nassau-st., New York.

Cabbages Worth Growing.

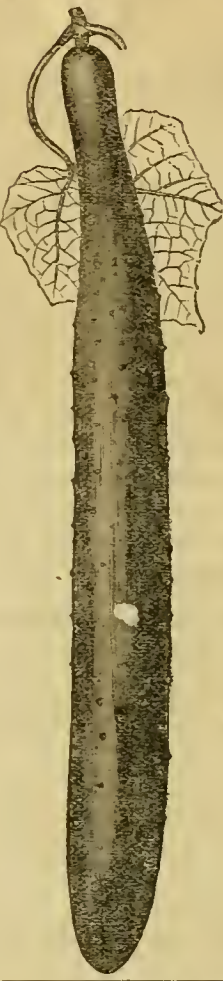
The following embraces the very best varieties in cultivation for a succession. Mailed to any address upon receipt of price.

	per doz.	4oz.	pound.
Early Wakefield	\$0.75	\$2.50	\$ 8.00
Early York and Large York, each	0.25	0.75	2.50
Early Winningstadt	0.40	1.50	5.00
Large Early Selzwinfurt	0.50	1.50	6.00
Large or Flat Brunswick, (True)	0.75	2.50	8.00
Premium Flat Dutch	0.50	1.50	5.00
Stone Mason	0.40	1.50	5.00
Marched Mammoth	1.00	3.50	12.00
Improved Ann Drumhead	0.50	1.50	5.00
Large Bergen late	0.50	1.50	5.00
Red Dutch for Pickling	0.35	1.25	4.00

A 1-ounce packet of each of the above varieties \$5.50. A common sized packet of the 12 varieties \$1.50.

B. K. BLISS & SON, Box 5,712, New York.

CUCUMBER, GEN. GRANT.



A superior variety, either for forcing or for culture in the open ground. It is perfect in form, solid and crisp, and of a most agreeable flavor. Many specimens were grown the past season averaging thirty inches in length. After a five years' trial, we unhesitatingly pronounce it better than any other variety for forcing.

Packets, containing 10 seeds, 25 cents. Five Packets for \$1.00.

Conover's COLOSSAL ASPARAGUS.

A European variety, introduced several years since, which, by a careful selection of seeds from the most vigorous shoots, has been wonderfully improved, both in size and quality, in point of which it surpasses all other varieties in cultivation. Specimens were exhibited the past season by Mr. Conover, which were grown along side the best "Oyster Bay" varieties, and received the same care and treatment, which attained four times the size of that popular variety. Though but two years from the seed, many of the plants produced from twenty to thirty sprouts, averaging from two to four inches in circumference, and were ready for cutting one year in advance of the ordinary varieties. Packets, containing 1/2 ounce, 50 cents. B. K. BLISS & SON, 41 Park Row, and 151 Nassau St., New York, (P. O. Box, 5,712).

New Tomatoes.

For a complete description of each variety, see February No. of *Agriculturist*.

- KING OF THE TOMATOES**—Remarkable for its great beauty, solidity, and fine flavor; per packet 25 cts.
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One packet of each of the above varieties \$1.00. Also the following well-known varieties at 10 cts. per packet: *Keyes' Early*, *Cedar Hill*, *Tilden*, *Maupay's*, *Sim's Early Cluster*, *Extra Early York*, *Cooks' Fairrite*, *Mammoth Chihuahua*, *Large Red Smooth*, *Feije*, *Perfected*, *Pear*, *Cherry*, *Strawberry*, etc., etc.

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Red Wethersfield, Yellow Danvers and White Portugal, grown for us in Connecticut the past season. One ounce 50 cts.; 4 ounces \$1.75; 1 pound \$6.00, mailed post-paid to any address upon receipt of price.

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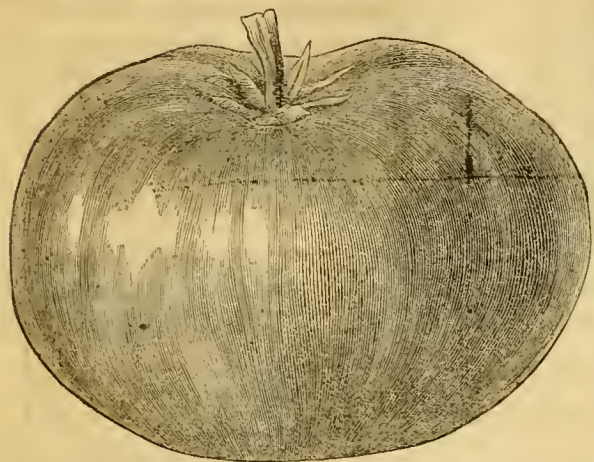
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 Second size, do. do. 1.00 do. 8.00 do. do.
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THE UNRIVALLED PRIZE TOMATO "GENERAL GRANT."



We take great pleasure in announcing to the public that we have secured the entire stock of this justly celebrated Tomato. We believe it the nearest approach to perfection of anything of the kind yet offered, combining more superior qualities. Size above the medium, three to four inches in diameter, growing in clusters; form round, slightly flattened, very regular, symmetrical, and rarely ribbed or wrinkled; color brilliant glossy crimson; flesh unusually firm, solid, and free from water, weighing from ten to twenty pounds more per bushel than other varieties; skin remarkably fine, smooth, and shining, coloring well up to the stem, a quality very desirable to those preparing them for the table; very productive, and of the finest flavor; bears carriage well, and keeps in good condition a long time after being gathered, retaining its goodness, and free from wilting.

We offer the following testimonials from practical parties, - gentlemen whose judgment in such matters is fully reliable. For further testimonials and description, see

Amateur Cultivator's Guide.

From Andrew S. Fuller, Author of Small Fruit Culturist.

We have had an opportunity of testing this tomato the past season, and believe it will prove to be one of the very best varieties in cultivation.

From J. F. C. Hyde, President of Massachusetts Horticultural Society.

I have known the General Grant Tomato now for two years, and last season raised a few tomatoes of this variety. I think it is the smoothest and every way the handsomest sort I have ever seen; it is quite solid, equal in this respect to any other out. I have regarded it as a great acquisition to our list of tomatoes.

From C. M. Brackett, Chairman of the Vegetable Committee, Mass. Horticultural Society.

Gents.—I have given the new tomato General Grant a fair trial of two seasons, in connection with a dozen or more of the new varieties recently introduced, such as the Cook's Favorite, Tilden, Valencia Cluster, Keyes', Eureka, Manray, Foard, Cedar Hill, etc., and find it surpasses them all in earliness, productiveness, and all the qualities which I consider requisite in a first-class market variety; and can heartily recommend it. No person, I think, who makes any of the above-named varieties his standard of excellence, will, after giving this variety one season's trial, grow any other. Its extraordinary beauty and singular richness of color command the attention of the most careless observer. Price per packet 25 cts.; 5 packets, \$1.00, by mail, post-paid. Prices to the trade on application.

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The twenty-third edition of this popular and useful work, which has met with so great favor in the past, will be ready Jan. 15, much enlarged and improved, containing descriptive lists of all Flower and Garden Seeds, worthy of cultivation, embracing over twenty-five hundred varieties; to which is added all the novelties in Flowers and Vegetables for 1869; also two hundred varieties of the choicest French Hybrid Gladioli.

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"Accept many thanks for the beautiful copy of your Annual Catalogue which you so kindly sent me. I find much that is new and rare therein. The arrangement, the concise cultural instructions, copious illustrations, and clear typographical execution, all combine to make it a model catalogue. I shall often have occasion to refer to it. It cannot fail to be of great use and interest to all horticulturists."

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"Please accept my thanks for your 'Guide.' I think you ought to call it 'The Garden Companion.' It is at once very useful and conveniently arranged; a sort of ready-reference book, very ornamentally got up; one of these few books I find fitted for any table; often wanted, and always at hand."

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Worcester or Rielly Potato.

This valuable variety has not been well known until the past season, when Mr. B. HARRINGTON, of Lexington, (who had grown it for a number of years), induced by his high opinion of its value, and the united testimony of all who had ever grown or eaten it, challenged a trial in quality with any seedling, old or new, from any State in the Union. Last September, at the Annual Dinner of the Committee of the Massachusetts Horticultural Society, a trial took place at the Parker House, Boston. There were present many distinguished horticulturists. Among those offered for trial was the Early Rose and several other varieties, considered by their respective friends the best. But it was the unanimous decision that the Worcester was the best table potato offered. It proved to be very mealy, dry, and of the most delicate flavor; free from any earthy taste; fair size; form inclined to roundish; color light pink; flesh very white; skin thin; eyes deep; and of superior baking quality. Another characteristic of this variety is that it will be found dry and mealy when but two-thirds grown.

From Hon. Marshall P. Wilder.

BOSTON, Nov. 20, 1868. DEAR SIR,—Please receive my thanks for the Worcester Seedling Potatoes. As a table-potato, it is certainly of first quality.

From the Editor of the Hartford Times, November, 1868. "We have received the Worcester Seedling Potatoes from you. We found them to be superior to any we have tried for several years; and we have tested about all of the best sorts."

From L. S. Goodale, Editor of the Berkshire Courier, Nov. 12, 1868.

"We tried the quality of the Worcester Seedling with the Rose and many other famous seedlings, and found it so decidedly the best, that nearly all others seemed coarse and earthy, and inferior in delicacy of flavor and fineness of grain,—a little to my disappointment, as I have quite a little stock of Rose in store. A gentleman from New York visiting with me claimed he could tell the Worcester from any other variety by smell. He was blindfolded; and, to my surprise, I found that he invariably could; also others, without confusion."

Four Pounds by mail, post-paid, \$1; One Peck, \$3; One Bushel, \$10; One Barrel, \$30; express to be paid by purchaser. WASHBURN & CO., Horticultural Hall, Boston, Mass.

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This new variety of Corn is early, sweet, and large. Unlike most early varieties, it averages twelve rows, and well filled. It is taking the place of all others, giving great satisfaction. Our stock grown from the original. Price, per packet, 15 cents. Address WASHBURN & CO., Horticultural Hall, Boston, Mass.

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LAXTON'S PROLIFIC EARLY LONG POD. This valuable variety was raised by T. Laxton, of Stamford, Eng. Some pods (in a green state) were exhibited at Mark Lane, last June, averaging eleven and twelve peas in a pod; and they were pronounced by several eminent members of the London seed trade to be an exceedingly fine variety. For a second early pea, there is no pea of a similar class in cultivation to equal it; and we feel very confident that it will be in general cultivation in a very few years. The pea has the same habit and character as Dickson's Favorite, excepting that the pods are nearly double the size. Price, post-paid, per pkt. containing 1/2 pint, 50 cts.; per qt., \$1.50. WASHBURN & CO., Horticultural Hall, Boston, Mass.

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Mr. C. BATES of Kingston, Mass., has spent twenty years of labor and care in producing this valuable variety of corn, obtaining the following results: It is a cross between the Whitman or Smutt's White and Early Canada. A rapid-growing and early-maturing corn, of low growth, small stalk, throwing its strength into the ears; ears growing very near the ground; cob small; corn large and well filled; color bronze, or a blending of yellow and white with a slight trace of red; very productive, yielding large crops even on poor soil; harvest averaging, from root to top, six spines from four to five feet long. This corn is highly recommended for all latitudes, particularly Northern, on account of the above-mentioned qualities,—early maturity, large yield of grain, and small amount of stalk. The favorable reports, together with the good impressions received on visiting Mr. Bates's corn-crib, have induced us to secure the entire stock, and we now offer it, in large or small quantities, at the following prices:

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WASHBURN & CO., Horticultural Hall, Boston, Mass.

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The attention of the public is invited to our large and superior assortment of the above, a list of which see our ILLUSTRATED CATALOGUE AND VEGETABLE AND FLOWER GARDEN MANUAL, which contains about 100 pages with numerous illustrations, and a descriptive list of all the valuable varieties of FLOWER AND VEGETABLE SEEDS OF AMERICAN GROWTH, together with many varieties and novelties obtained from the most reliable ENGLISH and CONTINENTAL DEALERS and GROWERS, with special directions for their cultivation,—also a list of many SUMMER FLOWERING BULBS, SMALL FRUITS, ETC., with many other valuable hints for cultivators. A copy will be mailed to all applicants enclosing 10 cents, which is not one-half the cost. Our ILLUSTRATED PLANT CATALOGUE will be published March 1st, and will be mailed upon receipt of 5 cents.

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In order to introduce our vegetable seeds as extensively as possible, and make it an object for every person who cultivates a vegetable garden to test their merits, we shall continue our very liberal inducements to purchasers. The following collections are put up in the most liberal manner, and contain choice seeds of the most and most useful sorts. Collection No. 1 contains 20 varieties, No. 2 " " " 40 " " " 200

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Early Rose, Harison, Early Goodrich Potatoes, and the Norway Oats.

This is a good opportunity for those who prefer to procure their seed direct from the grower and at low rates. I warrant my stock to be the TRUE and GENUINE.

EVERY FARMER

should send for my Descriptive Circular, giving History of the SANFORD CORN, with testimonials from those who have tested it the past season. Wherever grown it has met with universal favor, and

The East and West, the North and South endorse it as being the best field corn. It ripens early and yields more with same culture, than any other variety. Testimonials can be furnished from different States, where it is reported to have yielded at the rate of 150 to 200 bushels per acre with ordinary cultivation.

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Upon receipt of \$1 I will forward to any address one pound Early Rose and choice of one pint Norway Oats or Sanford Corn.

Circulars with Price List sent FREE. Address S. B. FANNING, Jamesport, Long Island, N. Y.

600 Barrels Harison Potatoes, for sale at \$4.50 per barrel. Early Rose, Early Goodrich, Vandever and other choice Seed Potatoes at low rates. Descriptive Circulars with price lists sent FREE. Address S. B. FANNING, Jamesport, Long Island, N. Y.

GLADIOLUS.

We would call the attention of all cultivators of this beautiful Flower to our fine collection, which includes all the new varieties. See "AMATEUR CULTIVATOR'S GUIDE." Mailed free for 25 cts. WASHBURN & CO., Horticultural Hall, Boston, Mass.

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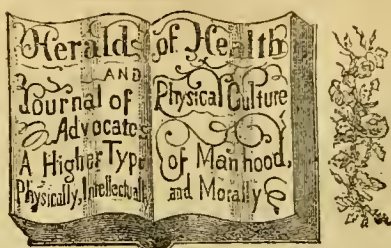
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Pure Air in Churches.

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Food for Children.

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Gardening for Money.

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Kitty Howard's Diary.

By Elizabeth Oakes Smith.

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By Prof. L. N. Fowler.

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By A Mother.

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Grape Cure.

The Heart.

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"With warm esteem, DIO LEWIS."

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They are guaranteed to have been made strictly according to the statements set forth in the pamphlets published in this and the preceding years.

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North Missouri contains about 25,000 square miles, or sixteen million acres, as desirable as any in the valley of the Mississippi. Through this garden of Missouri the Hannibal and St. Joseph Railroad extends, and all its lands lie near its track and numerous depots. The climate, so temperate and healthful, and a virgin soil so capable of producing almost every kind of vegetation, invite emigrants from the cold and bleak North to settle on our rich prairies.

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Early Rose, \$5 per peck; Early White Peachblow, \$2 per bushel; Early Shaw, \$2 per bushel; Early Shaker's Fancy, \$2 per bushel; Orano, \$2 per bushel; Harrison, \$2 per bush.

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Price \$3 per barrel of 3 bushels; \$5 per half barrel. Reasonable discount on large orders. Plants also in proper season at low rates.

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The best early and the best late potato known. Grown from the original stock on the best potato sand soil, for sale as follows: Rose, 1 lb. 75 cts., 5 lbs. \$2, 15 lbs. \$1, 1 bushel \$14, barrel \$35. HARISON, 15 lbs. \$1, bushel \$2, barrel \$5. Goodrich, Dykeman, and other choice varieties at the lowest market price.

EARLY ROSE POTATOES (warranted genuine), \$50 cts. per lb.; \$5.00 per peck; \$15 per bush.; \$40 per bbl. Early Henry, a good early variety, 25 cts. per lb.; \$1.25 per peck; \$4 per bush.; \$10 per bbl. Early Goodrich and Harison, 25 cts. per lb.; 50 cts. per peck; \$1.50 per bush.; \$4 per bbl. For prices of Strawberries, Raspberries, and Blackberries, see another column. Send for Catalogue.

New Seedling Potatoes.

THREE NEW KINDS of great excellence, not to be found in any other Catalogue, will be found engraved and fully described in my new Seed Catalogue. Sent gratis to all.

New and Rare Plants.

Aquilegia curvata.—A splendid herbaceous. "Queen of Columbinas, and most beautiful of all hardy herbaceous plants." \$1 each, \$9 per dozen. Wiegela.—Isoline, hortensis, nivea, multiflora foribunda, 75 cts. each. Amabilis, variegata, rosea nana variegata, and arborea grandiflora, 50 cts. each.

Davison's Thornless Black Raspberry.

Get your plants of the first disseminator, who propagates only from selected stock. For origin, prices, how to cultivate, &c., send for circular to JOSEPH SINTON, Angola, Erie Co., N. Y. AGENTS WANTED.

RASPBERRIES AND BLACKBERRIES.—Large quantities. Best quality and varieties for field culture. Wild Goose Plums. Other fruit and ornamental trees. Send stamp for Catalogues and Club-rates.

CLAREKEE BEANSPIRERY.—A few thousand No. 1 genuine plants at "bottom" prices. Also, Horseradish Sets, low.

Washington Street Nurseries.

GENEVA, N. Y., Jan. 1, 1869.

The title of the firm of Bronson, Graves, Selover & Co, has this day been changed to GRAVES, SELOVER, WILLARD & CO., Mr. Bronson retiring from the concern, as will be seen by reference to the following Card.

Thankful to our patrons for past favors, and respectfully soliciting a continuance of the same, which we hope to merit by renewed diligence in all departments of our business, we remain Yours truly, GRAVES, SELOVER, WILLARD & CO.

CARD.

Having sold my interest in the firm of BRONSON, GRAVES, SELOVER & Co. on account of impaired health, I take this method to express the desire that the liberal patronage bestowed upon the WASHINGTON STREET NURSERIES be continued to them under the management of their present Proprietors.

PEACH TREES.

A large stock of the best varieties handsomely grown and cheap, at the New Brunswick Nurseries, N. Y. EDWIN ALLEN.

Moorestown Small Fruit & Plant Farm.

Having (as you can see by referring to page 67, Feb. No.) a large stock of Plants and Potatoes, I am prepared to furnish well packed, genuine No. 1 plants at the following prices:

Table listing prices for various plants and seeds, including Dr. Nicaise and Napoleon 3rd Strawberry, Juennia or Knop's 700, Lady of Lake, Barnes' Mammoth and Golden Queen, Philadelphia, Hippowam, and Lemig's White, Agriulturist, Green Prolific, and Lady Finger, Brooklyn Scarlet and New Jersey Scarlet, Wilson's Albany and Cutter's Seedling, Downer's Prolific, and French's Seedling, Ida, Metcalf's, and Starr's Seedling, Philadelphia Raspberry, Clarke do., Davison's Thornless, Doolittle's Improved Black Cap, Prosser, Wilson Early Blackberry, Kitchinny do., Lawton do., Currants, Gooseberries, and Grape Vines at lowest rates.

THE CONTINENTAL FRUIT PACKAGE combines COVERED BOX, SPRING CRATE, and thorough ventilation. Illustrated circular free. CONTINENTAL BOX CO., No. Bridgewater, Mass.

The New Everblooming and Fragrant Japan Honeysuckle proves to be the finest Hardy Ornamental Plant ever introduced. 50 cents each, \$5 per doz, by mail, prepaid, or express. My new Catalogue of Seeds, Plants, and Fruits, will be sent to any address, gratis. B. M. WATSON, Old Colony Nurseries and Seed Establishment, Plymouth, Mass.

GRAPE VINES at 3 CENTS.—Concord, 1 and 2 years old, \$1 per doz.; \$4 per 100; \$30 per 1,000. Hartford Prolific, 1 yr., \$1.50 per doz.; \$7 per 100. Clinton, 2 yrs., \$3 per 100. Roses 1 yr., Dundee Rambler, and Felicit, \$1.50 per doz.; \$4 per 100; 2 yrs. \$6. Apple Root Grafts, \$10 per 1,000; 2 yrs., 1 to 2 feet, \$10 per 1,000. All first-class Stock. HARVEY CUTTIS, Owego, Tioga Co., N. Y.



250,000 Nursery-grown Evergreen trees, 2 to 6 years transplanted, Arbor Vite, Hemlock White Spruce, also Black and Norway Cherry, and L. Versaillese Currants—small, on to stout 2 years growth, SABLE QUEEN Blackberry, new, sent out by us. Sent cut in Catalogue, with 12 other cuts of fruits and trees. Sent by mail. J. W. MANNING, Reading, Mass.

NATIVE EVERGREENS,

at \$5 per 1,000. Balsam Fir, Arbor Vite, White Pine, Spruce and Hemlock, 6 to 12 inches high, 10,000 for \$10. Packing free. Also fresh, prime Apple Seed at \$9 per bushel, 5 bush. at \$8. JAMES A. ROOT, Skaneateles, N. Y.

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ESTABLISHED 1791.

All kinds of Trees cultivated that are desirable and hardy.

Young Trees at Cheap Prices.

1-year-old Pear Trees, 3 to 4 ft.	\$25 per 100
1 " " Apple " 2 to 3 ft.	16 " "
1 " " Plum " 3 to 4 ft.	25 " "
1 " " Cherry " 4 to 5 ft.	25 " "
1 " " Peach " 4 to 6 ft.	12 " "
1 " " Concord Grape.	6 " "
1 " " Shrubbery, 10 varieties.	10 " "
1 " " " 10 " "	16 " "
2 " " Asparagus.	\$10 per 1,000
Linnaeus Bunchb.	30 " "

No charge for packing or delivering to Express Co. Terms—cash with order or by Express C. O. D. All Express charges to be paid by purchaser.

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TO WHOM IT MAY CONCERN.—STRAWBERRY, Raspberry, and Blackberry Plants of all the leading varieties, for sale cheaper than ever before offered; also, Root Cuttings, Currant and Gooseberry Bushes, Grape Vines, Asparagus Roots, and Early Rose Potatoes; all warranted genuine and of the best quality. Persons wishing to plant any of the above would do well to send for a list of our *low prices*, previous to purchasing elsewhere. Correspondence solicited, and satisfaction guaranteed. CHAS. COLLINS, Moorestown, N. J.

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We will give one hundred dollars for 100 plants of any new sort offered that will prove *more productive on any soil, or in any locality*, than this sort, for either one, five, or ten years on the same ground. Send for our Circular, giving full description, beautiful cut, &c.

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Send for Price List

of
50,000 Concord and
50,000 Ives Grape Vines. For sale by
J. W. CONE, Vineland, N. J.

Descriptive Catalogue

of Green-House and Bedding Plants, with beautiful Colored Plate, just published, which will be sent on receipt of ten cents.

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of a general assortment of **First-Class Nursery Stock**, offered at low rates, which will be sent on receipt of stamp. Address C. W. SEELYE & CO., Rochester Central Nurseries, Rochester, N. Y. Trade List sent on application.

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Ives Vines and Cuttings.

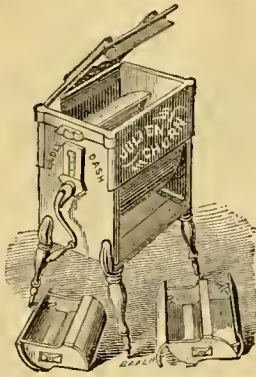
Send for its history and award of premium for being the best wine grape. To secure Stock, order at once. As low as any offered. JAS. F. MARTIN, Mt. Washington, Hamilton Co., Ohio.

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No. 2 holds 8 gallons, churns 5 gallons.

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With two wheels. For boy's size, wheels 21 and 26 inches, plain seats, \$25. Ditto, with horse body, \$30. A boy can learn himself to ride in a few hours. Velocipede Canterer Horses, \$12 to \$35 for boys or girls. Velocipedes and Propellers, with 3 or 5 wheels, \$4 to \$15. For sale by the manufacturer, S. W. SMITH, 90 William-st., New York.

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Blackberry, Raspberry, and Strawberry Plants. All kinds of best quality, at lowest prices. Price Lists free. G. H. LAMBERT, New Brunswick, N. J.

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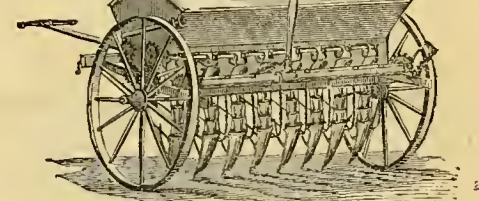
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With the Improved Guano Attachment & Grass Seed Sower.



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The Desideratum of Seeders! Perfect in Mechanical Construction! Perfect in its Performance of Work!

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Saves one hand in planting; a boy can use it; fits any hoe handle; counts and drops the grains exactly where wanted; weighs seven ounces; an extra metallic wheel, Harper's Improvement, with each planter. Sold at retail prices as follows: No. 1, \$1. No. 2, \$1.25, by the dozen, \$7 and \$8. Extra wheels \$1.50 per dozen. County licenses on reasonable terms. Address

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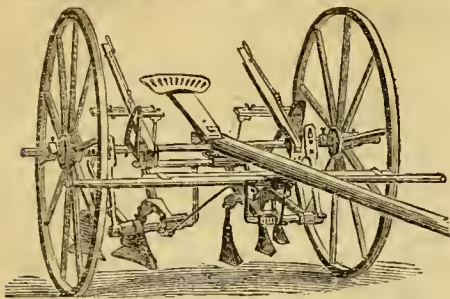
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It has received the Highest Premiums at the most important Field Trials ever held in any country.

Its Great Durability has been thoroughly Established, and it is everywhere known and recognized as the

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Valuable improvements added for 1869.

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Exclusive manufacturers of the Buckeye Mower and Reaper, for all the State of Pennsylvania, lying east of the Alleghany Mountains.



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Invalid Carriages, all sizes, from \$40 to \$100.

Patent Sedan Carrying Chairs, prices \$10 to \$18.

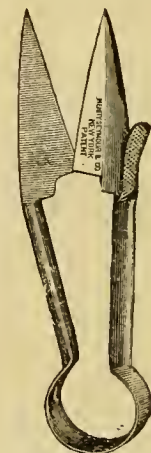
Invalid Chairs and Carriages made to order to suit all cases.

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Patented November 22, 1864; September 30, 1866; and July 21, 1868.



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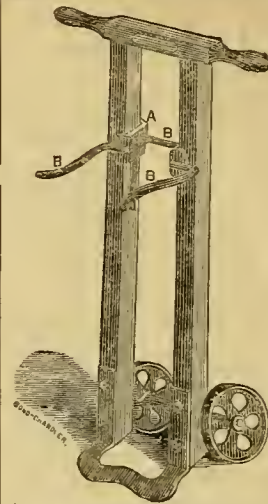
"We much like the Sheep Shears made by **HENRY SEYMOUR & CO.** They possess the superior advantage of being made from one piece of metal, which gives them solid springs. The stops are tempered so they cannot wear away and let the blades slip. Among their varieties we entirely prefer for fine wool sheep, Strong's Patent Thumb-piece Shears. The Thumb-piece gives better facilities for clipping the legs, heads, etc., of any kind of sheep. I also use their Toe Nippers. No. 3 is most used. I have tested the articles, and such is my verdict."

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Send Samples and prices sent free. Address **PAUL,** the Remnant man, Providence, R. I.

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PATENT COMBINED Bag Holder and TRUCK.



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Price of Bag-Holder & Truck combined, only \$3.

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TRUMPHANT OVER ALL OTHERS.

BUILDERS, MASONS AND BRICK-MAKERS Come and see it make the most and best brick at the least expense of any machine ever made. It is worked by two horses or by steam power. Its cost as a practical brick-maker is not known. I defy competition. **J. H. BENICK,** No. 71 Broadway, Room No. 23, New York.

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INGERSOLL'S HAY AND STRAW PRESSES, INGERSOLL'S RAG AND PAPER PRESSES, INGERSOLL'S HIDE AND HAIR PRESSES, BOTH HAND AND HORSE-POWER PRESSES.

for baling all kinds of material, on hand and made to order. Also, a practical machine for sawing down timber. Price \$25. For price-list and full information, call on or address the manufacturers, **INGERSOLL & DOUGHERTY,** Greenpoint, (Brooklyn), N. Y.

"EAGLE BRICK MACHINE."

The best for the price. See out in February number. Address **FREY, SHECKLER & CO.,** Bueyrus, Ohio.

SWIFT'S PATENT FARM MILL.

Efficient, low-priced, and durable. Send for Circular. **LANE BROTHERS,** Washington, N. Y. Warehouse 261 Pearl-st., New York.



THE IMPROVED OHIO CHESTER

HOGS produce the greatest amount of Pork for food consumed, of any known breed. Send stamp for its description, and a great variety of other Thoroughbred and Imported Animals and Poultry. **L. B. SILVER,** Salem, Ohio.

See statement of Hon. John Danforth, on page 463, of December Agriculturist.

PREMIUM CHESTER WHITE PIGS for sale.

The greatest pork producers of the day. Have gained 11 1/2 cts of live flesh for each pound of corn consumed. Send for circular. Address **Jas. Young, Jr. & Co.,** Marshallton, Pa.

Harrison Potatoes.—A quantity of this favorite winter variety, true to name. Price \$2 per bushel; \$5 per bbl. **EPHRAIM MORROW,** Tully Covy, Allegheny Co., Pa.

FOR SALE.—THOROUGHBRED DEVON CATTLE AND COTSWOLD SHEEP.

F. M. CHURCHMAN, Indianapolis, Indiana.

C. S. BETTS, Importer and Breeder of Choice Poultry.

Fowls imported to order. Eggs from Light and Dark Brahmas, Silver Spangled Hamburgs, White Leghorns, Yellow-legged, and Silver Spangled Top-knotted Polands, great beauties, \$3 per doz.; from Buff Cochins and Dark Brahmas, just imported, \$5 per doz., delivered at Express Office, Monot Kisco, N. Y.

"PRIZE POULTRY" for Sale.

Having purchased the choice stock of prize poultry, bred and owned by Mr. G. Z. Ryckert, St. Catharines, Ont., consisting of Brahmas, Spanish, Hamburgs, Leghorns, Buff Cochins (Hazard), Gray and White Dorkings, and Spanish Bantams, all A. 1, I will sell a few pairs at reasonable prices, and will be prepared to sell eggs in the Spring, of all kinds. **TOBIAS SCHANTZ,** Camden P. O., Lincoln Co., Ont.

EGGS of Dorking, Spanish, light and dark

Brahma, Cochin, Crevecoeur, La Fleche, Houdan, Malay, Game, Hamburgs, Rouen and Aylesbury Ducks, \$5 for 3 doz. Packing and freight \$1 to New York. Trio fowls, \$15 to \$20. Tomhouse Geese, \$15 to \$20 per pair. Package and freight to New York, \$9. Address **JAMES C. COOPER,** Cooper Hill, Limerick, Ireland.

EGGS FOR HATCHING from several varieties of the very choicest kinds of poultry.

Orders booked now to be filled in due season. Send stamp for Circular. **J. Y. BICKNELL,** Westmoreland, Oeida Co., N. Y.

White Asiatic Brahmas' eggs, pure stock, pea comb, cocks to 12 lbs., hens 7 to 9. 18 eggs \$1.45, \$6. *Houdan* eggs from imported stock, pure, very handsome, 12 eggs \$8, well packed to ensure their hatching. Sent any distance. Address **W. S. CARPENTER,** Iye, Westchester Co., N. Y.

For a good employment, read "ANY MAN," page 113.

PRIZE HOUDAN FOWLS.—Having secured the trio imported by Mr. Mallory, which received first prize, Paris Exposition, I am now prepared to take orders for a limited number of Eggs. Eggs and a few imported birds of the following varieties: Houdan, La Fleche, Crevecoeur, (White Leghorns, four first Premiums.) Dark Brahmas, Black Polish, Black Hamburgs, Silver-penciled Hamburgs, Aylesbury Ducks, two Guelderland Cocks. Address, with stamp, JOHN SALISBURY, Jr., Nyack, N. Y.

BE YOUR OWN JUDGE OF PURE BRED POULTRY. Buy the *Standard of Excellence*—containing full description of every known variety. Price 50 cts. Imported and prize Native-bred poultry. Send stamp for circular.
PRIZE ALDERNEY COWS, bulls, and heifers from imported stock. J. M. HALSTED, 73 Broadway, New York.

EGGS of pure-bred White Leghorns and Silver Hamburg, \$1.50 per doz.; Black Spanish & Golden Poland, \$2; White-crested Poland & Rouen Ducks, \$3.
 D. LONG, Box 433, Elizabeth, N. J.

EGGS by Express, of the Pure White-faced Black Spanish Fowls, \$1.50 per 13. Send for Circular. JOHN BENNETT, Sunmar, Ind.

PREMIUM CHESTER WHITE PIGS carefully boxed and shipped to all parts of the country. For Circulars and Price, address JAMES HUGHES, Gum Tree, Chester Co., Pa.

EGGS from Crevecoeur and Houdan Premium Stock, of direct importation. Also unsurpassed Brahma Pootras. Address I. G. HAMILTON, Box 447, New York City.

Stouffer's Patent Egg Preserver.—A Great Discovery. Keeps eggs perfectly fresh for two years. Affidavits to this fact. Cost of using process 1 cent per dozen. State, county, and city rights for sale. JOHN F. BEAZELL, Uniontown, Fayette Co., Pa., Genl. Agent, U. S.

Eggs.—Buff Cochin, Houdan, Dark Brahma, Game and Golden Schright Bantam from imported stock. Address with stamp, G. H. LEAVITT, Flushing, L. I., N. Y.

ALDERNEYS of good pedigree for sale by G. W. FARLEE, Cresskill, N. J., on Northern Railroad, one hour from New York.

TO FARMERS.



THE LODI MANUFACTURING CO. invite Farmers and others using manures, to send for a pamphlet descriptive of their Fertilizers. They offer their

Double Refined Poudrette,

equal to the best superphosphate, at the low price of \$35.00 per ton on board, in New York. They also make superior articles of NITRO-PHOSPHATE and PURE BONE-UST.

WE ASK ATTENTION TO THE FOLLOWING TESTIMONIALS.

Prof. Geo. H. Cook, of the New Jersey Agricultural College of New Brunswick, says: "The Double Refined Poudrette and Nitro-phosphate of Lime, paid us full 100 per cent above their market value, in the increase of crops this year."

Michael Moore, Trenton Falls, Oneida Co., N. Y., says: "With the Poudrette, I have always had a fine crop of Onions; without it a miserable failure."

For all root crops and green-house plants I consider it invaluable."
 C. G. Starkweather & Sons, Rochester, N. Y., (seed growers) say of the Double Refined Poudrette: "For growing Onions it can't be beat. On Corn, used one and a half bush, to the acre without any other manure; you would be surprised to see the difference where we skipped a row or two; it added one-fourth to the crop, and matured much earlier; also the same on Potatoes. It is worth its cost as a preventive of the wire-worm."

Horace Valentine, Cambridge, Washington Co., N. Y., says: "Where used, it gave one-half more Corn and Potatoes."

C. O. Brundage, South Sodus, says: "I think it added nearly one-half more to the yield of my corn crop."

Wilson N. Pace, Chateaugua, Westchester Co., says: "I used the different kinds of superphosphates along side of your Double Refined Poudrette. The crop where the Poudrette was used was fully equal to the other at half the cost."

Address, THE LODI MANUFACTURING CO., Office 66 Cortlandt-st. Box 3,133, New York P. O.

E. Frank Coe's Bone Superphosphate, A SUPERIOR FERTILIZER,

Always Reliable and Uniform. Manufactured at Hunter's Point, N. Y. Address for Circulars, etc., ENOCH COE, Williamsburg, L. I., New York.

MAPLE LEAVES is the Cheapest Paper Published.

Each number contains SIXTEEN QUARTO PAGES nearly as large as the *American Agriculturist*, and its matter is varied and interesting, and peculiarly suited to Rural Homes. Every one may find something to suit his or her taste in its entertaining columns, which are a *mélange* of Stories, Poetry, Puzzles, Agricultural and Scientific Articles, Useful Recipes, Ornamental Art, etc., etc., and every number is *finely illustrated*. It is issued about the first of each month, and is sent regularly to subscribers for

ONLY TWENTY-FIVE CENTS A YEAR.

A fine list of Valuable Premiums is offered to those who will get up Clubs. Send on your subscription at once. You will not regret it. Specimen copies sent free on receipt of stamp. Address O. A. ROORBACH, 102 Nassau-street, New York.

1,000 Tons of Pure Ground Bone.

No. 1.—PERUVIAN GUANO, GLASGO SOLUBLE AMMONIATED GUANO, HOYT'S SUPERPHOSPHATE OF LIME, DOUBLE REFINED POUURETTE, LAND PLASTER, ETC., At Wholesale and retail by

GRIFFING & CO., 53 & 60 Courtlandt St., New York.

For a good employment, read "ANY MAN," page 113.

MANHATTAN LIFE INSURANCE COMPANY OF NEW YORK,

Nos. 156 & 158 Broadway,

JANUARY 1, 1869.

RECEIPTS DURING THE YEAR 1868.

For Premiums, Extra Premiums, for Interest, &c. \$2,205,340 29
 DISBURSEMENTS.

Paid Claims by Death.....	\$481,885 00
Paid Expenses, Salaries, Taxes, &c.....	311,855 13
Paid Dividends, Return Premiums, &c.....	387,023 53
	\$1,180,763 65

ASSETS.

Cash in Bank and on hand.....	\$49,911 87
Bonds and Mortgages.....	1,234,055 00
Loans on Policies in force.....	2,033,050 68
(The actual estimates of the value of the Policies which secure these Notes is about \$2,500,000.)	
United States and New York State Stocks.....	712,605 00
Quarterly and Semi-Annual Premiums deferred, and Premiums and Interest in course of collection and transmission.....	649,342 54
Temporary Loans on Stocks and Bonds.....	596,225 50
(Market value of the Securities, \$387,773 60.)	
Interest due to date and all other property.....	92,318 10
	\$5,967,537 59

ADVANTAGES TO INSURERS.

Smallest average Ratio of Mortality. Expenses less than any Company. Liberal modes of Payment of Premiums. Insurers receive the largest Bonus ever given. Dividends Made Annually on all Participating Policies. All Kinds of Non-Forfeiting Life and Endowment Policies issued. Policies incontestible. Endowment Policies and the Non-Forfeiting Life Policies Non-Forfeitable after one Payment. HENRY STOKES, President. C. Y. WEMPLE, Vice-President. J. L. HALSEY, Secretary. S. N. STEBBINS, Actuary. H. Y. WEMPLE, Assistant Secretary.

The Proper Study of Mankind is Man.
A PICTORIAL MAGAZINE
 of Human Science,
 CONTAINING
 Ethnology, Physiology, Phrenology, Physiognomy, and Psychology. Their application to HUMAN IMPROVEMENT.
 THE PHRENOLOGICAL JOURNAL is \$3 a year; or, to clubs of ten, only \$2. Single numbers, by first post, 30 cents. Address, S. R. WELLS, No. 389 Broadway, New York.

"KNOW THYSELF."
 "A first-class family journal."—*N. Y. Eve. Post.*
 "Edited with marked ability."—*Christian Inquirer.*
 "Very instructive."—*Christ. Advocate.* "Always up to a high standard of literature."—*Wheeling Intelligencer.* "Filled with valuable matter."—*Examiner.*
 "Deservedly popular all over the land."—*Rural New Yorker.* Agents wanted. SUBSCRIBE NOW.

WHAT IS SAID OF IT.
 "SEE THE JOURNAL."

WANTED.—Agents to sell the only Unabridged Complete People's Edition of Conybeare & Howson's *Life and Epistles of*

S. T. PAUL,

with an able and eloquent dissertation by Prof. Leonard Bacon, of Yale College. Over 1,000 large octavo pages. Commended by the most eminent divines and ablest scholars in all parts of our country. AN EXACT REPRINT of the latest English "PEOPLE'S EDITION," and differs from all others, by the substitution, by the authors, of translations and notes in English, in place of numerous quotations and notes in foreign languages. Send for our 16-page descriptive circular, giving full particulars and terms to Agents. Address S. S. SCRANTON & CO., Publishers, Hartford, Conn.

\$40. Stitch! Stitch! \$37 50.

A \$40 first-class SEWING MACHINE given as premium for \$37 50 worth of subscriptions for WOOD'S HOUSEHOLD ADVOCATE, a first-class Family Paper, at 75 cents a year. Send for specimen copy. Address S. S. WOOD, P. O. Building, Newburgh, N. Y.

GUANO No. 1 Peruvian Guano: dissolved bones; ammoniated Superphosphate; pure ground bones; bone and flesh; Sulphate of Soda; Sulphate Ammonia; German Potash Salts; Fish guano; Dried and Ground Meat, for sale with all other fertilizing materials by GEO. E. WHITE, 150 Front St., New York.

POOR LAND FERTILE. READ "Sterility is Laid." Vile's New System of Agriculture, 25 cents. J. A. RIDDLE, Manchester, N. H. Agents Wanted in every town.

IMPORTANT ANNOUNCEMENT.
 VALUABLE ADDITION TO
Gray's Botanical Text-Books.
 By ASA GRAY, M. D.,
 Fisher Prof. of Natural Science in Harvard University.

The *Teacher*, the *Student*, and the *Botanist*, will hail with delight the appearance of this new and valuable CLASS-BOOK, just added to this popular Series, namely:

SCHOOL & FIELD BOOK OF BOTANY.

—This consists of the "LESSONS IN BOTANY" and the "FIELD, FOREST AND GARDEN BOTANY," bound together in one compact volume, forming a comprehensive *School Botany*. This will be the most generally used class-book of the whole Series, adapted to beginners and advanced classes, to Agricultural Colleges and Schools, as well as to all other grades in which the science is taught.

This work supplies a great desideratum to the Botanist and Botanical Teacher, there being no similar class-book published in this country. Cloth. 8vo. 623 pages. Price \$2.50.

GRAY'S FIELD, FOREST and GARDEN BOTANY—is an easy introduction to a knowledge of all the common Plants of the United States (east of the Mississippi), both wild and cultivated. It is designed to be a companion of the "LESSONS IN BOTANY." 256 pages. Price, \$2.00.

Single copies sent by mail on receipt of price. Address the Publishers,
IVISON, PHINNEY, BLAKEMAN & CO.,
 47 & 49 Greene St., New York.

TO THE SUBSCRIBERS OF MAPLE LEAVES.

The undersigned regrets to state that during the last few weeks he has received numerous complaints from persons who have sent to him for MAPLE LEAVES. Some of these complaints are the result of neglect in his office, others are not. During the last half of December and the first part of January, he was compelled to be absent from his business on account of a terrible affliction, and during that absence the parties in charge of his business did not attend to it as they should have done, one in particular, having sent papers in every direction but the right one, judging from the number of papers that have been returned by the P. O. Department. On his return to business he discovered at once how things stood, and long before this notice appears all errors, as far as in his power, will have been rectified. He has on hand a large pile of letters ordering Maple Leaves, some as specimen copies, some as subscribers, with which he can do nothing, as the writers have neglected to give their addresses; and in nine cases out of ten these parties do not write to find out what is, and to be able, but consider that they have been swindled. He desires all who have written for Maple Leaves and had no reply or paper, to write again, at once, and give their full name and address, and they will receive immediate attention, and he trusts be convinced that this is not a swindling concern, as many evidently believe it is.
 O. A. ROORBACH, 102 Nassau-st., New York.

Pat'd Water-Proof Paper
 Roofing, Siding, Ceiling,
 Carpeting, Water Pipes,
 Eave Gutters, &c. Address
C. J. FAY & SONS, Camden, New Jersey.

HORACE GREELEY.—AGENTS
 Wanted to sell "Recollections of a Busy Life," the *Autobiography of HORACE GREELEY* and the *History of his times*; an elegant volume of 624 pages, with superb steel Portrait of the Author, and other beautiful illustrations. Selling very rapidly. Price, \$3.50, extra cloth. Exclusive Territory and Liberal Discounts. Send for circular to J. E. FORD & CO., 164 Nassau Street, New York.

Agents Wanted
 FOR THE AMERICAN YEAR BOOK AND NATIONAL REGISTER for 1869. Astronomical, Historical, Political, Financial, Commercial, Agricultural, Educational, Religious. This work contains a vast fund of late and valuable information respecting the United States and Foreign countries, including every department of the General and State Governments, which all classes will find invaluable for daily reference. Address O. D. CASE & CO., Publishers, Hartford, Conn.

WANTED.—Agents to canvass for "NAPOLEON III." By JOHN S. C. ABBOTT. A new work of great beauty and rare merit. It is the best book for agents in the market, because the subject is continually before the people. Napoleon is the most conspicuous person in the world. Abbott is the most fascinating writer in America. It is a new book, with no competition. Address B. B. RUSSELL, 35 Cornhill, Boston.

AGENTS WANTED.—For the only steel engraving of Gen. Grant and his family published with their approval. Engraved by Sartain. Size 15 by 19. \$2.50. 100 per cent to agents. Address GOODSPEED & CO., Chicago, or No. 37 Park Row, N. Y.

(Advertisements on this page, \$2.50 per Agate Line of Space.)

ESTABLISHED 1861.

THE GREAT AMERICAN TEA COMPANY

RECEIVE THEIR

TEAS BY THE CARGO

FROM THE

BEST TEA DISTRICTS

of

CHINA and JAPAN,

and sell them in quantities to suit customers

AT CARGO PRICES.

To give our readers an idea of the profits which have been made in the Tea trade, we will start with the American houses, leaving out of the account entirely the profits of the Chinese factors.

1st.—The American house in China or Japan makes large profits on their sales or shipments—and some of the richest retired merchants in the country have made their immense fortunes through their houses in China.

2d.—The Banker makes large profits upon the foreign exchange used in the purchase of Teas.

3d.—The Importer makes a profit of 30 to 50 per cent in many cases.

4th.—On its arrival here it is sold by the cargo, and the Purchaser sells it to the Speculator in invoices of 1,000 to 2,000 packages, at an average profit of about 10 per cent.

5th.—The Speculator sells it to the Wholesale Tea Dealer in lines at a profit of 10 to 15 per cent.

6th.—The Wholesale Tea Dealer sells it to the Wholesale Grocer in lots to suit his trade, at a profit of about 10 per cent.

7th.—The Wholesale Grocer sells it to the Retail Dealer at a profit of 15 to 25 per cent.

8th.—The Retailer sells it to the Consumer for ALL THE PROFIT HE CAN GET.

When you have added to these EIGHT profits as many brokerages, cartages, storages, cooperages and wastes, and add the original cost of the Tea, it will be perceived what the consumer has to pay. And now we propose to show why we can sell so very much lower than other dealers.

We propose to do away with all these various profits and brokerages, cartages, storages, cooperages and wastes, with the exception of a small commission paid for purchasing to our correspondents in China and Japan, one cartage, and a small profit to ourselves—which, on our large sales, will amply pay us.

By our system of supplying Clubs throughout the country, consumers in all parts of the United States can receive their Teas at the same price (with the small additional expense of transportation), as though they bought them at our warehouses in this city.

For manner of getting up Clubs, see former advertisement in this paper.

Parties sending Club or other orders for less than thirty dollars had better send a Post-office draft or money with their orders, to save the expense of collections by Express, but larger orders we will forward by express, "to collect on delivery."

Hereafter we will send a complimentary package to the party getting up the Club. Our profits are small, but we will be as liberal as we can afford. We send no complimentary packages for Clubs less than \$30.

Parties getting their Teas of us may confidently rely upon getting them pure and fresh, as they come direct from the Custom House stores to our Warehouses.

We warrant all the goods we sell to give entire satisfaction. If they are not satisfactory, they can be returned at our expense within 30 days, and have the money refunded.

The Company have selected the following kinds from their stock, which they recommend to meet the wants of clubs. They are sold at cargo prices, the same as the Company sell them in New York, at the list of prices will show.

PRICE LIST OF TEAS:

- OOLONG (Black), 70c., 80c., 90c., best \$1.10 lb.
- MIXED (Green and Black), 70c., 80c., 90c., best \$1 per lb.
- ENGLISH BREAKFAST (Black), 80c., 90c., \$1, \$1.10, best \$1.30 per pound.
- IMPERIAL (Green), 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
- YOUNG HYSON (Green), 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
- UNCOLORED JAPAN, 90c., \$1, \$1.10, best \$1.25 per pound.
- UNPOWDERED (Green), \$1.25, best \$1.50 per pound.

Consumers can save from 50c. to \$1 per pound by purchasing their Teas of this Company.

COFFEES ROASTED AND GROUND DAILY.

GROUND COFFEE, 20c., 25c., 30c., 35c., best 40c. per pound. Hotels, Saloons, Boarding-house keepers, and Families who use large quantities of Coffee, can economize in that article by using our FRENCH BREAKFAST AND DINNER COFFEE, which we sell at the low price of 30c. per pound, and warrant to give perfect satisfaction. ROASTED (Unground), 30c., 35c., best 40c. per lb. GREEN (Unroasted), 25c., 30c., 35c., best 35c. per lb.

NOTICE OF THE PRESS.

From the American Agriculturist.

THE GREAT AMERICAN TEA COMPANY.—To Querles.—Before admitting their advertisement, we learned that a large number of our clerks and others had for several months been buying their Tea and Coffee from this Company, without its being known who they were, and that they had been highly pleased with their purchases, both as to quality and price, and were all recommending their friends to the same course. As we have published the advertisement for many months, and received no complaints, we conclude "there is no humbug about the establishment."

N. B.—INHABITANTS OF VILLAGES AND TOWNS WHERE A LARGE NUMBER RESIDE, BY CLUBBING TOGETHER, CAN REDUCE THE COST OF THEIR TEAS AND COFFEES ABOUT ONE-THIRD, (BESIDES THE EXPRESS CHARGES), BY SENDING DIRECTLY TO "THE GREAT AMERICAN TEA COMPANY."

CLUB ORDER.

SPRINGFIELD, Ill., Sept. 16, 1867.

TO THE GREAT AMERICAN TEA COMPANY, 31 and 33 Vesey Street, New York.

Please send me by Merchants' Union Express the following bill of Tea, &c.

1 lb. Imperial.....S. Lanphear.....	at \$1.25.....	\$1.25
1 Black.....	.....at 1.00.....	1.00
10 Java Coffee, raw.....	.....at 35.....	3.50
1 Imperial.....H. M. Lanphear.....	.....at 1.25.....	1.25
1 Black.....	.....at 1.00.....	1.00
10 Java Coffee, raw.....	.....at 35.....	3.50
8 Imperial.....B. D. Lloyd.....	.....at 1.25.....	3.75
1 Imperial.....Horace Morgan.....	.....at 1.25.....	1.25
1 Black.....	.....at 1.25.....	1.25
2 Imperial.....Simon String.....	.....at 1.25.....	2.50
5 Black.....Wm. Bishop.....	.....at 1.00.....	5.00
3 Uncolored Japan.....J. Marr.....	.....at 1.25.....	3.75
8 Java Coffee, raw.....L. A. Allen.....	.....at 35.....	2.80
4 Imperial.....A. Morris.....	.....at 1.25.....	5.00
1 1/2 Imperial.....Thos. Higgins.....	.....at 1.25.....	1.88
1 1/2 Black.....	.....at 1.00.....	1.50
5 Black.....A. Hickox.....	.....at 1.00.....	5.00
3 Black.....J. Farley.....	.....at 1.00.....	3.00
2 Imperial.....	.....at 1.00.....	2.00
1 1/2 Imperial.....Mr. Carey.....	.....at 1.25.....	1.87
1 1/2 Black.....	.....at 1.00.....	1.50
10 English Breakfast.....T. Hudson.....	.....at 1.20.....	12.00

\$65.55

Gents.—Above I send my fourth order. Your Teas have given good satisfaction, and those who have used them will have no other, but induce their friends to send also. To prove this, I had made up my order and got a Post-Office Money Order, when others came in and nearly doubled the amount, as you will see by second money order, both of which I enclose.

The last order came safely to hand by Merchants' Union Express. Accept thanks for complimentary package.

Very respectfully,

S. LANPHEAR.

Caution.—As some concerns, in this city and other places, imitate our name and style of advertising and doing business, it is important that our friends should be very careful to write our address in full, and also to put on the number of our Post-Office Box, as appears in this advertisement. This will prevent their orders from getting into the hands of these bogus imitators.

POST-OFFICE orders and Drafts, make payable to the order of "The Great American Tea Company." Direct letters and orders (as below, no more, no less)

Great American Tea Company,

Nos. 31 and 33 VESEY-ST.,

Post-Office Box, 5,613, New York City.

HORSTON'S SELF-RAISING BREAD PREPARATION makes the most wholesome and best of bread, BISCUIT, CAKES, &c. Unlike some other yeast, it contains no POISON to create DYSPEPSIA, and the bread may therefore be eaten hot without detriment. Resolving itself into Phosphate of Lime and soda, it prevents RICKETS, CHOLERA, and decay of TEETH, and promotes the growth of Muscle and Bone. In "raising" the dough it does not, like other yeast, decompose flour, but adds nutriment to the bread, and otherwise improves it in quality and quantity. Each package contains full directions for use. Send to H. T. Love, No. 5 James Slip, New York, for "The Good Cook's Hand Book," for particular directions, to be sent you gratis, and ask your Grocer for "Horston's Bread Preparation." JOHN DWIGHT & CO., Wholesale Agents, No. 11 Old Slip, New York.

PORTABLE STEAM ENGINES.

For FARM, MIXING, or MECHANICAL purposes. These machines require no brick work; mounted on legs they are especially adapted for use in MILLS, SHOPS, FORDRIES, or PRINTING ROOMS,—or mounted on wheels they are adapted for out-door work, THRESHING, WOOD SAWING, &c. See Rural New-Yorker of August 15th, 1868, first page.

27 Circulars with description and prices furnished on application to A. N. WOOD & CO., Eaton, Madison Co., N. Y.

DOWNER OIL.

In consequence of the vast number of fatal accidents resulting from the use of inferior qualities of oil, the subscribers would offer to the public their superior article

The Downer ILLUMINATING OIL.

Among the eighty samples of Oil offered for sale in this city and tested by Dr. Chandler, under instructions of the Board of Health,

The Downer Oil

WAS

The Only One Safe and Reliable.

We have been LARGE MANUFACTURERS FOR THE PAST ELEVEN YEARS, and during this whole period it has never been the cause of a single accident.

DOWNER KEROSENE OIL CO., 113 Maiden Lane, Cor. Pearl St., N. Y. Office in Boston, 108 Water St.

HOME

Insurance Company of New York,

Office, No. 135 BROADWAY.

Cash Capital.....\$2,000,000.00
Assets, 1st Jan., 1869..... 3,966,282.70
Liabilities..... 106,837.48

FIRE AND INLAND INSURANCE.

CHARLES J. MARTIN, President.

A. F. WILLMARTH, V.-Pres. D. A. HEALD, 2d Vice-Pres.
J. H. WASHBURN, Secretary.

GEO. M. LYON, Ass't Sec. T. B. GREENE, 2d Ass't Sec.

EARLY ROSE POTATOES.—Grape Vines, &c.

I will sell a few barrels of Early Rose Potatoes at 50c per bbl.; \$12 per bushel, \$7 per half bushel; \$1 per peck, and 4 lbs. by mail, post-paid, for \$2.50. Warranted genuine. Also a fine assortment of Concord, and other Grape Vines, by the thousand, hundred, or dozen, at very lowest rates. Send for Circular with full details to E. B. WICKS, New Brunswick, N. J.

PLANT'S

WARRANTED.

GARDEN SEEDS.

THE VEGETABLE SEEDS OFFERED BY US are raised expressly for our establishment from stock selected by us, and by careful and trustworthy growers who make it their business; and these seeds have maintained for twenty-four years an enviable reputation for general purity and for the quality of the vegetables produced from them. Our selection of seeds is made with the wants of our soil and climate expressly in view.

Send for Seed List or Gardener's Almanac.

PLANT BROS., PRATT & CO., St. Louis, Mo.

NEW CROP ONION SEED.

(By Mail—Postage Paid.)

Large Red Wethersfield, per Pound, \$5.00
Yellow Danvers, " " \$5.00
Yellow Dutch or Strasburg, " " \$5.00
Address JAMES SHEPPARD,
P. O. Box 2,972, 219 Pearl-st., New York.

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AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

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ORANGE JUDD & CO.,
PUBLISHERS AND PROPRIETORS.
Office, 245 BROADWAY.

ESTABLISHED IN 1842.

Published also in German at \$1.50 a Year.

\$1.50 PER ANNUM, IN ADVANCE.
SINGLE NUMBER, 15 CENTS.

4 Copies for \$5; 10 for \$12; 20 or more, \$1 each.

Entered according to Act of Congress in March, 1869, by ORANGE JUDD & Co., in the Clerk's Office of the District Court of the United States for the Southern District of New-York.

VOLUME XXVIII.—No. 4.

NEW YORK, APRIL, 1869.

NEW SERIES—No. 267.



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CHANGE OF PASTURE.—DRAWN BY EDWIN FORBES.—Engraved for the American Agriculturist.

It is an interesting question, regarding the care of sheep at the West, how far the Spanish-American negligent practice, British carefulness, or the native American "easy-go-lucky" mixture of care and neglect, will prevail. In the scene before us we have a shepherd with his flock and doubtless well-trained dog in an American landscape. In this our artist truthfully represents not only the facts on hundreds of farms, but the spirit of the times. A change of pasture, even though the grass may be thick and abundant, is of great benefit to all kinds of grazing animals; and when land is carrying anywhere

near a full stock, the benefit to the pasturage is quite as great as to the animals. A great portion of the herbage of a pasture becomes distasteful to the stock from being trodden and lain upon, or otherwise defiled, and it requires a week or more of time in connection with the action of dews and rains to purify it. Young grass shoots up among the old spears, and a fragrance and flavor is added to it which leads cattle to eat it with much greater relish, even though it has had but a few days' respite. Every farmer, of a moderate range of experience, has observed the advantages coming from a change

of fodder in the winter, and, if possible, he varies the feed of his sheep by giving, occasionally, oats in the sheaf, corn fodder, and hemlock boughs, as a change from wheat straw and hay. The herbage of different pastures does not consist of precisely the same species of plants; the soil varies, and hence the same kinds of plant exhibit slight differences in their chemical constitution; besides, the waters vary, and for these reasons a change of pasture is also a change of diet. So the needs of the system are better supplied, and, besides, the mere variation produces favorable effects upon the digestion of the animals.

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AMERICAN AGRICULTURIST.

NEW-YORK, APRIL, 1869.

Writing our hints about work in April early in March, as we must, with the thermometer at twelve degrees above zero, and sinking, so that we doubt not that it will record six degrees lower by sunrise, it seems as if a yielding sward and green fields were too far in the future to be objects of immediate care. Nevertheless the sun every day rises higher, and the warm noons and lengthening days are welcome assurance of a change of season.

April, in our climate rarely a very rainy month, is seed-time throughout the most of the United States; at the extreme north winter may still hold sway, and throughout the cotton belt a good part of this work has been anticipated. The heavy and constant labors of the spring give farmers little leisure, as these must be pushed forward with all vigor as rapidly as possible while fair weather and tolerably dry soil make field labor possible. Storms are always threatening, and we must be ever careful to have the work so planned that it may be dropped for a week without serious consequences. We may sow the spring grains, wheat, (rye), barley, oats, and peas; the grasses and clovers, carrots and onions, beets and flax, as well as other crops, the seeds of which are not likely to rot in the ground; and seedlings not liable to injury from moderate freezing. This month our flocks and herds usually receive their greatest natural increase. The weather is favorable, being rarely too cold for the young, and yet so cool and moist that puerperal and milk-fevers are less liable to attack the dams than later in the season.

Hints About Work.

Let us begin the season with the resolution that we will not raise weeds, come what will. Last year the whole country seemed full of them; they carpeted the corn and cotton fields; grass grew everywhere; weeds stood as high as the grain in thousands of fields. In our trips about the country, potato fields were rarely recognizable after August, except by the ragweed, and this state of things existed from Maine to Minnesota, and southward.

Grass and Clover may be sown on any land which is suitably prepared for them, upon winter or spring grain, on old sod harrowed well, or by themselves. It is better to brush or bush in grass and clover seed than to roll the land. The plan of sowing a little white clover with grass-seed is advisable wherever an application of plaster will not bring it in abundantly, as it generally will on old land.

Spring Grains.—The land should never be wrought when wet or tenacious. Wait for it to dry, but get the seed in as early as possible. On good strong soil it is best to drill all kinds of grain. We have no doubts either that it will usually pay to cultivate wheat, barley, and oats. Spring grains have a short time to grow. They ought not to be obliged to dispute their ground with weeds, and while the land must support all the plants it can carry it should not be burdened, nor should the best be crowded with many penny ones. Trust no light grain; get heavy seed, even if it cost \$10 per bushel. Soak the seed in strong brine, to kill the smut spores, and dry it in lime slaked to a powder, to make it fit for sowing. See Basket items for an effective scarecrow.

Winter Grain, if harmed by frost, is much benefited by rolling and by a top-dressing of dry soil, all the more if one or two hundred-weight of guano and plaster per acre be mixed with the soil. Grass and clover may be sown upon it any time this month. Liquid manure applied by a sprinkling cart will bring forward with a rush that intended for soiling. It will pay to send the men and boys through grain fields, especially if drilled, with hoes to cut up the weeds large and small. Those which get an early start will live; others will be smothered by the grain. If this weeding can be thorough, it will undoubtedly pay to put off sowing grass and clover until the first of May.

Potatoes.—Plant only in good soil; if it be rich, fresh manure will cause the crop to rot more or less. If the soil be poor, a lack of vigor in the plants to resist disease. It is best to plant as soon as the soil is warm—cutting the seed into pieces of two or three eyes, and letting them dry a little before planting. Plant deep under light ridges, so that the field may be harrowed. The sets may be cut smaller later in the season.

Onions, if sufficient labor can be given, are a very paying field crop. The ground must be in perfect order, rich and mellow. Do not sow too extensively, make sure of good seed, and plant early.

Carrots.—Sow the Long Orange, on rich soil deeply worked, any time this month or next,—the earlier the better if the soil is not too weedy. Put the rows twenty inches apart, so as to cultivate by horse power conveniently.

Flax requires land in the very best state of preparation. Whether grown for seed or for fibre it should be sown as soon as the ground is warm and light. No coarse manure should be employed, and the greatest pains should be taken to have the land free from weeds, water, and stones, and the seed evenly sown, and covered. We have not space for particular instructions, but they are given fully and clearly in a pamphlet on flax-culture. See book list.

Tobacco.—The seed bed is prepared this month, and the seed sown. The best and the warmest spot in the garden or elsewhere is selected, well enriched and mellowed. A bed four feet wide and twelve to sixteen feet long is abundantly sufficient for an acre of ground. It is well to burn brush, evenly spread over the soil, to kill weed seeds, and to sow the seed while the soil is still warm after thorough raking. A pamphlet of seed suffices. See Tobacco Culture pamphlet in book list.

Hemp needs good rich corn land; it follows corn in rotation very well. When many acres are put in it is well to sow one or two acres at a time, at intervals, for a month, to take advantage of variable seasons, and so that the culture and harvesting shall not come too much at once.

Farm Hands.—Make early engagements for the season or for the year. Most hands engaged for the year in the spring and paid by the month will remain through the winter. Engaged in the autumn they are often tempted to leave in the spring. Make it a rule to pay a man all that he is worth. Never bind yourself so that you cannot discharge a man for impudence, dishonesty, and filthiness, moral or physical. An employer need not keep a servant guilty of a criminal offence, even though he have a contract or witnessed engagement.

Manure.—We have little faith in top-dressings of barn-yard manure applied in the spring. Manure ought to be got under ground, or well harrowed in at this season. The temptation is strong to scatter the manure too much. Concentrate is the rule. We manure too much ground, we work over too much, and thoroughness is out of the question in too many cases. The hauling out of manure is attended with a great deal of labor, especially if the roads are poor and the ground is soft. Field compost heaps made in the fall, and manure piles laid up in the fields when needed during the winter, are a great saving.

Commercial Fertilizers.—It pays to use them discreetly. Peruvian Guano obtained pure is the safest and cheapest fertilizer a farmer can buy, if he will only mix it thoroughly with some divisor, and distribute it evenly in proper quantities. Pure bone-dust is safe, but rarely cheap; superphosphate of lime, still less cheap, but if pure, excellent, if used with care; fish manure of various kinds, both good and cheap. Samples vary greatly. Pondrette rarely pays to cart far; its real value is but little greater than good barn-yard manure, and often it is not worth so much. It requires discretion and considerable experience to make a profitable use of concentrated manures, but they are a valuable resource to the intelligent farmer.

Farm Stock.—The directions in regard to farm animals given in the Hints about Work last month are equally applicable to this, and it is not worth

while to repeat them. Be especially solicitous that breeding stock of all kinds have good feed and care. Working animals must be well fed. They ought to be thoroughly and frequently groomed,—both oxen and horses. Milch cows will give more throughout the season if supplied during the period between the time they "come in" and "grass," with succulent feed—roots, grain sown for soiling, etc.

Tools.—We are apt to neglect to get hand tools until we want to use them. It is a poor plan, but it is not followed by such risks and inconveniences as when we delay getting mowing machines and other heavy implements in the same way. The latter ought to be ordered at once. In buying hand tools, get such as are adapted to the soil and the work; men ought to accustom themselves to use the tools fittest for their labor. The tendency to employ steel instead of iron, and to make tools light, springy, tough, and sharp, rather than heavy, is to be encouraged. There is a great saving of labor in it. Keep all tools sharp, clean, and free from rust. Have a box at the tool-house door with a peck of corn cobs in it, and half a dozen bunches of husks tied like little brooms, and a less number of little birch brushes as large around as one's wrist, so that there may be no excuse for dirty tools. Lard melted with a tenth part of its weight of rosin is the best application for keeping rust from hoe blades, plows, mowing machine knives and fingers, and all edge tools.

Work in the Horticultural Departments.

To the inexperienced in such matters our advice to prepare soil for trees, etc., in October and November, and to order trees and seeds in February, may have seemed of but little weight; but now that the busy, working time has come, it will be found that every day that has been saved by heeding these hints is of great help. Now is the time when well-considered plans tell, and when the winter "head-work" shows its value. Most beginners in any branch of horticulture undertake too much at first. An acre well planted and thoroughly cared for will bring more in satisfaction or in money, than several acres done "with a lick and a promise." No one has a moral right to set out a tree or plant that is likely to be neglected. A slovenly acre is an injury to all the property in the neighborhood. While work must be pressed at all points, do not try to "hurry the season." Land must settle and dry before it can be worked, and should never be stirred unless it will crumble.

Orchard and Nursery.

Preparation for planting and setting the trees will, in most localities, be done this month.

Injured Trees.—See last month's notes. If trees have become heated and the buds have started in the packages, prune them very severely.

Pruning at Planting.—Much nonsense has of late been written on the disastrous effects of pruning young trees. If a tenth of the recorded bad results have been obtained, the cultivator had better go into some other business, and let trees alone. See Dr. Hull's remarks on page 98, last month.

Planting.—Holes should be made wide enough to receive all the roots of the tree properly spread out. Set the tree no deeper than it stood in the nursery, allowing for the settling of the recently disturbed soil. Fill in with fine top-soil, using no manure. Be careful to leave no holes among the roots un-filled; work the earth in with the fingers, separating all matted fibres, and use water from a watering-pot to carry it into the crevices. Make the soil firm over the roots by pressure with the foot.

Nursery Rows.—If trees cannot be planted in the best manner, it will be better to set them in nursery rows until autumn. The distance apart is to be governed by their size. Give room enough to grow without crowding, and enough for thorough cultivation. Trees thus treated may be transplanted in autumn without difficulty.

Grafting the plum and cherry may be done whenever the buds have not swelled. Other varieties may be worked much later.

Pruning on nursery trees and small stock should be done before the buds open. Cut back the weakest branches the most severely.

Budded Stocks are to be headed back, *i. e.*, have the stock cut off above the bud which was put in last summer. This is done two or three inches above the insertion. When the buds have failed, the stock, if large enough, may be grafted; remove the soil and graft below the surface in the collar.

Root-Grafts, as well as cuttings, are to be set as soon as the soil can be worked. Put the root-grafts in rows four feet apart, or wide enough for the cultivator, and ten or twelve inches apart in the rows. Careful planting, to secure close contact between the soil and roots, is essential to success.

Seeds.—Plant tree seeds of all kinds as soon as possible. An early growth, before hot weather comes on, is necessary to make good stems.

Fruit Garden.

Early planting, as soon as the ground can be put in order, is desirable. Those who grow fruit for a family supply should plant the well-tried and reliable varieties for their main crop. At the same time it is well to test such "novelties" as appear to promise well. These, if found desirable, can be readily propagated in any required quantity. We enumerate some varieties here; descriptions of others are found in catalogues and advertisements. Directions for planting were given last month.

Blackberries.—The Kittatinny has, on the whole, proved itself the best variety. Wilson's Early is a little earlier. New Rochelle is too tender.

Raspberries.—The list is large. The Clarke is perhaps the hardiest of the red sorts. The Black-caps are becoming popular. The Improved or Doolittle is good, but exceeded in productiveness by the Mammoth Cluster, which is somewhat later.

Currants.—Versailles is the best red; the White Grape, the best white. Have plenty of currants.

Gooseberries.—The native varieties are the only ones to be relied upon. The Houghton, or American Seedling, is one of the best.

Grapes.—Plant good one-year or two-year-old vines. Concord is the generally reliable variety. There are many better sorts, some of which are local in their success. Creveling, Iona, Delaware, Salem, Eumelan, and Diana, are all good. The Ives is very hardy, and in quality not superior to Concord.

Strawberries.—The Wilson is the most generally reliable. Beyond this it is difficult to select. For heavy soils, we should try Jucunda, Triomphe de Gand, McAvoy's Superior, Charles Downing, etc., and on light soils the Agriculturist. The number of varieties is so large, and success so variable in different localities, that it is not practicable to make a list that would suit everywhere. Plants are cheap, and it costs but little to experiment with a few sorts.

Kitchen Garden.

Manure and thorough cultivation are the requisites to success, after good seed or good plants have been obtained. Notes on some of the newer vegetables will be found on page 138. We can here enumerate only some of the leading sorts. Some sub-tropical things omitted in the present enumeration will be given next month. While we have given here only a few standard varieties, we advise the trial of novelties by those whose tastes and means allow them to do so. To us one of the great charms of gardening is the trial of varieties we have not before grown. Send to some reliable seedsman for a catalogue, and make a selection of things for trial. See last month's, and previous numbers, for articles on hot-beds and cold frames. In January notes, the distinction between hardy and tender vegetables is given.

Plant in Rows as much as possible, if horse implements are to be used in cultivating.

Seed-beds will be needed for such plants as are started in the open air, and then transplanted. The soil of these should be rich and light.

Asparagus.—Remove the litter from old beds,

and fork in the manure. Salt, at the rate of five bushels to the acre, is beneficial. Sow seed in fifteen-inch rows, to get young plants. Conover's Colossal is said to be large and prolific. Make beds of year-old plants, setting them in well-manured soil, in two-foot rows, fifteen inches apart.

Beans.—Plant as soon as danger of frost is over. Early Valentine is a standard sort. Fejee is highly commended. Plant in drills two feet apart. Leave Limas until the ground is well warmed.

Beets.—Sow in drills a foot apart, Bassano, Simon's Early Turnip, or other early sort.

Carrots.—Shorthorn is best early. Sow as beets.

Cabbage.—Transplant from cold frame or hot-beds; make the rows two feet apart, and set the plants sixteen inches apart. Sow seeds in seed-bed. Wakefield and Little Pixie are good early; Winnigstadt, medium; Marblehead Drumhead, and others, late, not forgetting the Savoys. Next month is soon enough for the late sorts.

Cauliflower.—Treatment the same as cabbage. Erfurt for early, and Lenormand for late, are best.

Celery.—Sow in seed-bed, Dwarf White, Solid, Boston Market, etc. The Turnip-rooted variety is sown the same.

Corn.—Early Dwarf Sugar, Farmers' Club, and Stowell, are all good. Mexican is the sweetest of all the varieties we have tested, though, being black, its appearance may be objected to.

Cress or Peppergrass.—Sow the curled every week or two, in drills six or eight inches apart.

Cucumbers.—Start on sods, as directed last month. White Spined is the best for table use; Early Russian, the earliest.

Egg Plant.—Always started under glass. See last month. New York Improved is the standard. Black Pekin and Large White are both fine varieties.

Horse-radish.—Putting the sets in manured trenches, and filling in as the plant grows is a good way.

Kohlrabi.—Sow in May and June, in 18-inch rows.

Leek.—Sow in seed-bed; the Flag is best.

Lettuce.—Transplant from cold frame, a foot apart each way. Sow in seed-bed. Curled Silesia and Simpson are the earliest. See catalogues for numerous sorts.

Onions.—See article on page 126. Put out sets of Top and Potato Onions, in fifteen-inch rows.

Parsley.—Sow in cold frames; Curled is best.

Parsnip.—The Hollow-crowned, the best. Sow in fifteen-inch drills. Use last year's seed only.

Peas.—See page 138. By all means try dwarf sorts for family gardens. Among these the Little Gem is the best. Sow in drills a foot apart. For late sorts, choose from the catalogues. We have yet to see a better pea than the Champion of England.

Peppers.—Sow in hot-bed, Squash for pickles, Sweet Mountain for stuffing, and other varieties.

Potatoes.—The Early Rose is the best of all the early potatoes generally obtainable. Those who feel they can afford the high price at which the seed is now sold should experiment with it. Early Goodrich was generally bad last year, but good heretofore. Dykeman is popular around New York. There are other early sorts offered. Early varieties only should go in the garden.

Rhubarb.—Fork plenty of manure into the bed, which can hardly be made too rich. Divide old roots, so as to have a bed to each piece, putting them four to six inches apart each way, according to the size of the variety.

Subsify.—Sow fresh seed and treat like carrots.

Spinach.—Sow the Round-leaved in eighteen-inch drills. Try the New Zealand later.

Sweet Potatoes.—Start the tubers in hot-beds, for sprouting about the middle of the month. Lay them nearly touching on two inches of good compost, splitting the large ones lengthwise. When the buds begin to start, cover with an inch of compost. Nansmond is the best variety.

Tomatoes.—Read all that has been said about the varieties of Tomato, and then plant Early Smooth Red for general crop, and try some of the newer

sorts. We have tried in vain to get at the bottom of the Tomato question. Sow in hot-bed, if not already done. Prick out those early sown into another hot-bed, when large enough to handle.

Turnips.—Sow early sorts in fifteen-inch drills. The Early Red and White Top are among the best.

Flower Garden and Lawn.

See last month's notes about lawns. Push all heavy work, such as making of paths and roads, and the laying out of borders, and get it out of the way.

Trees.—Set out deciduous ones as soon as possible, and do it with all the care given to fruit trees.

Edgings.—Box should be set early. Make neat work. Old plants, stripped up so as to have a bit of root to each, are much more sure than cuttings.

Shrubs may be transplanted. It is not easy to make a selection where the variety is so large. Weigelas, Spiraeas, Calycanthus, Dwarf Lilacs, and Snow-balls, Gordonia, Rhododendrons, and even as many more, are all desirable. Don't forget our natives, the Azaleas, Clethra, Laurels, and others.

Perennials.—Divide and reset, and sow seeds for new stock. See an article last month, page 97.

Annuals.—Start the tender kinds, such as Balsams, Ricinus, etc., under glass; sow hardy ones as soon as the soil is ready. The list is so large that we must refer to the catalogues. Mignonette, Candy-tuft, Petunias, Portulacaeas, Asters, and many other standard varieties, every one must have. Then try some of the most promising "novelties," the seeds of which do not cost too much money.

Bedding Plants.—One of the mistakes of gardening is putting out the soft-wooded plants used for summer decoration too early. The long, cold rains, which we always have in the spring, give them a "set back," from which they are slow to recover.

Climbers.—Have a plenty of them. Let them hang about porticoes, over fences, along wire screens, and then where it will be appropriate, put up cedar or locust supports for them. Most of the annual ones are fine when fairly started; all the Morning Glories, not forgetting the new mottled ones, several Gourds, Cypress Vine, Thunbergias, Canary-bird Flower, and many others, may be used with good effect. The various new varieties of Clematis are splendid; Climbing Roses, Honeysuckles, Akebia, and a host of others, may be had at the nurseries, and our own woods furnish the charming "Virginia Creeper," (American Woodbine), the Wax-work, (Celastrus,) Moonseed, and others.

Roses.—Give them good, well-drained soil, and be prepared to fight insects. The Chinas and Teas bloom all summer. The Remontants, (also called Hybrid Perpetuals,) bloom in spring, and sparingly in autumn, and then there are the old-fashioned June Roses, which give a wealth of unsurpassed bloom, and are done with it. The Chinas and Teas may be bought started in pots; the others should be dormant when planted, to get the best results.

Green-house and Window Plants.

Warmer days will allow of more free ventilation. Sudden changes will occur, and during the cold, damp spells, fire heat will sometimes be needed.

Propagation of plants for out-of-door planting should be pushed, as with the increasing power of the sun this now becomes much more difficult.

Pot off plants, using light, rich soil, as fast as they are fairly rooted in the cutting bench.

Half-hardy Plants, Carnations and Roses, may be planted out as soon as the soil can be prepared.

Seeds.—Sow the tender Annuals in boxes, to get strong plants ready for the open ground.

Dallias.—Start, by placing in heat. Cut off the sprouts with a bit of root, and pot. Rare sorts may be propagated from cuttings of the shoots.

Tuberoses, for out-of-door blooming, should be potted and started in heat the last of the month.

Insects flourish in these spring days, and fumigation with tobacco stems and other means of prevention and destruction must be attended to.

Water will be needed more frequently now. Do not let growing plants suffer for the lack of it.

AMERICAN AGRICULTURIST.

ORANGE JUDD & Co., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies; Four to nine copies, \$1.25 each; Ten to nineteen copies, \$1.00 each; Twenty copies and upwards, \$1 each. Papers are addressed to each name.

TO BE

the possessor of one or more of the valuable things offered in next column, and that, too, without paying any money for them, is an easier thing than most of our readers imagine. Note the following facts: Since last September, thousands of persons have each taken a copy of the Agriculturist, shown it to friends and neighbors, exhibited its beauty and explained its value, obtained their names as subscribers, and in this way made up lists of four, eleven, twelve, thirteen, and twenty names, and from that up to hundreds, and forwarded them to us. In return we have sent them the premium articles desired, to which they were entitled—ranging in value from parcels of Rose Potatoes up to Steinway's magnificent pianos. Many of them, after getting one premium, have

CONTINUED

on, and got other premiums, and they are still at it. This is fact number one. Now, human nature and human wants are about the same everywhere in this country, and what one man or woman or child has done can be done by others; and what can be done in any one place, can be done in almost all other places. This is fact number two; and fact number three is, that the chance for success, by the Reader of this, is just as good as that of any other person. As a fourth fact, we may add that there are still over 20,000 (twenty thousand, mark you!) Post-offices in this country where no premium club has yet been started for 1869; and again, fact number five, there is room for another club in almost all places where clubs have already been raised. This is the case

ALL THROUGH

the country. And while about it, we will name fact number six, that April is a very good month to get up such clubs. The more there is to do, the more people want the help of such a journal as this, with its calendar of work to be done, and its many hints and suggestions scattered all through the pages. Thousands of people have told us that single hints obtained from this paper have returned them from ten to a hundred times its cost, in better crops. An extra bushel or two of roots or vegetables from the garden will pay. A bushel per acre more of corn, grain, roots, etc., from ten acres of land will pay well for a dollar and a half invested in the paper, and no one can fail to get some such benefit from the thoughts stimulated to activity, or set in motion, by reading others' thoughts. Now, please keep the above in mind during

APRIL

and MAY also. Use any and every opportunity to solicit some friends or neighbors to take the American Agriculturist. You will thus benefit them, and soon have a list of names that will bring yourself a valuable premium with no expense. (See, "Read and Note carefully" further on.) We could publish a thousand letters from those who have received these articles from us within a few weeks, all of whom feel pleased. Send on the names as fast as obtained, and we will at once forward the beautiful numbers of this volume as far as issued. We keep printing new editions from January for all new comers. With every name sent, note that it is to count towards a premium list, and we will so record it; and then at any time between now and June, when you are done increasing the list, you can have any premium your list entitles you to. With the exception of the animals, we can get abundance of all the premiums (all first-rate) that will be wanted. Will you, Reader, try for a premium at your Post-office, or get some one else to do it? Try it to-day!

[In this table are given the regular cash prices of each article, and the number of subscribers required at \$1.50 a year, to get it free, also at the lowest club rate of \$1 a year. For full descriptions of the articles see extra sheets, sent free.]

Table of Premiums and Terms, For Volume 28—(1869).

Table with columns: No., Names of Premium Articles, Price of Premiums, and Number of Subscribers required. Lists items like Alderney Bull, Cotswood Ram, Sewing Machine, etc.

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-two Premiums, Nos. 29, 30, 31, 61, 62, 63, 64, and 76 to 100 inclusive, will each be delivered FREE of all charges, by mail or express, (at the Post-office or express office nearest recipient), to any place in the United States or Territories. —The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance specified.

Read and carefully Note the following: (a) Get subscribers anywhere: all sent by one person count together, though from one or a dozen different Post-offices. But... (b) Say with each name or list of names sent, that it is for a premium list, and we will so record it... (c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. Any time, from now to June, will be allowed to fill up your list as large as you may desire. The premium will be paid whenever you call for it... (d) Send the exact money with each list of names, so that there may be no confusion of money accounts... (e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer the premiums... (f) Specimen Numbers,

Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, for every extra copy of the paper costs, with the 2c. prepaid postage, about 12 cents. (g) Remit money in Checks on New York Banks or Bankers payable to order of Orange Judd & Co., or send Post-Office Money Orders. If neither of these is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

If from any Cause one fails to get the larger premium desired, the names can be used for a smaller one.

A Full Description of the Premiums is given on an extra sheet; a copy will be sent free to every one desiring it. For New Premium 106, see page 32, January No. We have only room here for the following:

No. 42—Clothes-Wringing Machine.—A very useful, time-saving, strength-saving, clothes-wringing implement, that should be in every family. The wringing of clothes by hand is hard upon the hands, arms, and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the garments.

No. 72.—Crandall's Improved Building Blocks furnish a most attractive amusement for children. Churches, Dwellings, Barns, Mills, Fences, Furniture, etc., in almost endless variety, can be built with them, and the structures remain so firm as to be carried about. The Blocks are put up in neat boxes, and with each box is a card giving many designs of buildings.

Nos. 76 to 81—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-seventh Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are put up in clean numbers, with full Index to each volume.—They are profusely illustrated, the Engravings used in them having alone cost about \$40,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from 16 to 27.

Nos. 82 to 87—Bound Volumes of Agriculturist.—These are the same as Nos. 76 to 81 above, but are neatly bound in uniform style, and cost us more for the binding and postage. Sent post-paid.

Nos. 88 to 99—GOOD LIBRARIES.—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any of the premiums 88 to 99 may select any books desired from the list on page 149, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post-Office, or Express office, as we may find it most convenient to send them.

No. 100—General Book Premiums.—Any one not desiring the specific Book premiums, 88 to 99, may select Books from list on page 149, to the amount of 10 cents' worth for each subscriber sent at \$1; or 30 cents for each name sent at the (ten) club price of \$1.20 each; or 60 cents' worth for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

A Few Dollars' worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to make their heads help their hands. Any good book will, in the end, be of far more value to a youth than to have an extra acre of land on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres than he would off from 50 acres without the mental ability which reading will give him. Far better to sell the acre of land, than do without the books. Several good books are announced in the Advertising columns, and in the list on page 149.

No. 106—Pocket Rifle.—(Breech Loading).—A full description of this beautiful implement, with illustrations, was given on page 32, of Jan. No. No one who enjoys shooting, or who has occasion to carry a light but effective weapon in traveling or while at work, will regret the trouble required to gather the 24 (or 18) subscribers required to secure this weapon free. If any one does not care for the mahogany case, we will present the weapon all complete, with extension breech and 100 cartridges, all packed in a strong pasteboard box, neatly papered, on receipt of 18 subscribers for 1869 at \$1.50 each.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for the month ending Mar. 15, 1869, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

Table with columns: RECEIPTS, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 23 days this month, 26 days last month, and 26 days last year.

Table with columns: SALES, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 23 days this month, 26 days last month, and 26 days last year.

Table with columns: 2. Comparison with same period at this time last year. RECEIPTS, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 23 days 1869 and 23 days 1868.

Table with columns: SALES, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 23 days 1869 and 23 days 1868.

Table with columns: 3. Exports from New York, Jan. 1 to Mar. 15. Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 1869 and 1868.

4. Stock of grain in store at New York.

Table with columns: Wheat, Corn, Rye, Barley, Oats, Mill. Rows for 1869 and 1868, with sub-rows for bushels and quarters.

CURRENT WHOLESALE PRICES.

Table with columns: PRICE OF GOLD, Feb. 15, March 15. Rows for Flour, Wheat, Corn, Rye, Barley, Oats, and various other commodities.

Gold has declined 4@5 per cent within the month, which decline partially represents the market value of the improvement in the public credit, that has occurred. Since our last, Government securities have advanced even more notably, on an unusually brisk business, largely for export. The trade in Breadstuffs, since our last, has been on a restricted scale, and prices have yielded materially. The dealings have been almost wholly in a jobbing way, the chief exceptions having been a moderate export movement in Spring Wheat, and some speculative activity in Oats. Holders have made free concessions to induce custom, but have not been successful in this effort. At present, the prospect is against the interests of sellers, who have been suffering severely for some months past. Shippers express themselves disappointed by the steady, downward tendencies of the foreign, as well as the home markets, and are buying very cautiously. Provisions have been generally held with more firmness; but business, as a whole, has been quite moderate. Cotton has fallen off on more liberal offerings, and a reduced call from all classes of purchasers. Wool has been quoted rather cheaper, on a very moderate movement. The second regular trade-sale of Wool took place on Thursday, March 11, at the Park-place and

Barclay-st. salesrooms, a little back of the Agriculturist establishment. The offering was quite attractive as a whole, embracing some 500,000 lbs. of Wool, including choice selections of Picklock, XX., X., No. 1 and No. 2 Fleece from Ohio, Pennsylvania, Michigan, New York State, Iowa, etc. Also a variety of Pulled Wools, of City and country pulling. Also an assortment of Excelsior Company's and other regular Scoured Sorts, made from Fleece Wools. Also California Fleece Wool and South American Wools, all of which were announced as to be sold without reserve. A very full representation of the trade, as well as of manufacturers, was in attendance, and the bidding was moderately spirited, for all the desirable lines, which were marketed at generally fair prices. The terms were about the same as at the preceding sale. Hay, Hops, Seeds, and Tobacco, inactive.

New York Live Stock Markets.—

Table with columns: WEEK ENDING, Bees, Cows, Calves, Sheep, Swine, Total. Rows for Feb'y 23d, March 1st, do, 8th, do, 15th, and Total for 4 weeks, 5 weeks, and Average per Week.

Notwithstanding the season of Lent, trade in cattle has been brisk. The beef has averaged of better quality, the droves running more uniform in size and weight than previously. The cold weather, which has been quite constant, inspired butchers with confidence, and larger sales were made. Every thing good sold quickly and easily on market days, leaving only the thinnish lots for the afternoon trade. This stock is not liked in our market at any price, and always has a slow sale. Some drovers had paid a high price at the West for their stock, and such found it difficult to clear themselves without loss; many of them claimed to have sold at a sacrifice, and grumbled at the hard market. On the whole, we think trade has been fair, and a little advance in the prices paid.

The following list gives the range of prices, average price, and figures at which the largest lots were sold:

Feb. 23d ranged 10 @ 17 1/2 c. Av. 14 1/2 c. Largest sales 14 @ 16 1/2

Prices seldom reached above 17c. per lb., dressed weight, for the best; a few "Tops" sold about 1/2c. higher. Some "Washington Birthday" heaves brought 1 1/2 @ 19c., but these were extra fat. One pair, said to be the finest in market this winter, sold to Mr. Lalor, of Centre Market, for about 20c. per lb. live weight; they were very fat, and were owned and fed by Mr. W. H. Drew, of Putnam Co., N. Y. There were several other pairs, quite fat enough, which brought high prices as fancy beef. The advance in price over last month may be set down at about 1c. per lb. Milch Cows have been a little more plentiful, the supply quite equal to the demand at present prices. A first quality milker seldom brings more than \$100, and most of the sales are below \$90. Prices range for good young cows at \$75 @ \$90. Medium to poor sell all the way from \$70 down to \$40. Veal Calves.—With cold weather and light supply for the first two weeks of the month, prices advanced a little and trade was brisk. There has been a corresponding falling off in price for the week ending March 15th, and figures stand about the same as given for last month. Prices range at 11c. @ 13c., live weight, for good. Some few fat sold as high as 14c. Fat "Hog-dressed" range 12 @ 15c., and "Bobs" sell by the head for \$4 @ \$6 each. Sheep.—There has been a light run all the month, and prices have advanced. The stock has averaged better, and a few lots of really fat sheep were for sale. The market kept firm, and every thing really good sold quickly; prices ranging for good at 8 @ 8 1/2 c. for medium 6 1/2 @ 7c., while some very fat reached as high as 9c. per lb. live weight. Swine have been more abundant; prices but little changed. Sales have been steady and quickly made for live hogs at 10 1/2 @ 11c. per lb.; Western-dressed 13 1/2 @ 13 3/4; city-dressed firm at 14 @ 14 1/2 c. per lb.

Precocious Calf.—Mr. Eli De Voe, of Summit, N. J., has an Alderney calf, in which strains of blood of several famous milking families unite, that was one year old March 4th, and is now giving milk and regularly milked. It has not calved, of course, and the owner thinks cannot be with calf. The udder and teats are well developed; the milk is good and rich, and, though not yielded in large quantities, is increasing daily.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Mark All Subscriptions sent in, as *New or Old*.

How to Remit:—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us *without any loss*.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. *Observe, the Registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money and seal the letter in the presence of the postmaster, and take his receipt for it.* Letters sent in this way to us are at our risk.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or *twelve cents, yearly*, must be prepaid at the Post-office where the paper is received.

Bound Copies of Volume XXVII (1868) are now ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (16 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume, (50 cents extra if returned by mail.) Missing numbers supplied at 12c. each.

Canada Postage Stamps cannot be used or sold here. Please remit in United States or Canada money.

Few Premium Animals Left.—It will be seen by the list on page 144, that only a few premium animals remain for distribution as premiums, viz: two Alderney bulls, five sheep, and some fowls, of which there were ten pairs of each kind originally offered. Those wishing these should hurry up, as the Publishers' rule is, "first come, first served." Of all the other good articles now in the table, the supply is abundant for all who want them, and we look for a large demand, judging from the success of our friends in April last year. Nos. 29, 30, 31, and 32, will not be wanted after this month.

"I Haven't a Foot of Land," writes a City Merchant, "and I may never have, but I take your paper for the advertisements. It is a luxury to get hold of at least one flourishing, well-patronized paper, and look over its business items with a feeling that they are, as a class, from good men. I actually read them all through, and often buy things that I would not think of sending for if I saw them announced along with a lot of good, bad, and indifferent advertisements. You have adopted just the right rule, in requiring advertisers 'not known to the editors personally, or by good repute, to furnish evidence that they have both the *ability* and *intention* to do what they promise to do in their advertisements.' That rule, with the rejection of the villainous quacks and patent medicines, thoroughly lived up to for a few years, would be the making of any paper in the country. Can't you stir up *all* your contemporaries to the importance of this, both for themselves and for the people? If practiced by all newspapers, it would every year save millions on millions of dollars, and thousands of lives, now destroyed by the oceans of syrups and decoctions, and the tons of pills, etc., annually consumed."

Whitewashing.—In these days of spring cleaning, the whitewash brush and pail are freely used by the good housekeeper, and none too freely, for aside from the effect that whitewash has upon the appearance of the dwelling rooms, its use in cellars, outhouses, etc., is doubtless of salutary effect. The essentials in whitewashing are, good lime and a good brush. Freshly burned hard lumps of lime are the best. Rhode Island lime has long been celebrated for its excellence, and is sent for long distances away from the little State. The brush should be a good one; not a cheap affair made to sell, but with long, good bristles, and plenty of them.

The lime is slaked by pouring boiling water upon it, stirring until the lumps disappear; more water is added, until a creamy liquid is obtained, of proper thickness for application. The pail should have a stiff wire stretched across the top, against which to draw the brush, to remove the excess of whitewash. Commence by sweeping the ceiling and walls, to remove all dust; then go over the surface, making the strokes of the brush all in one direction, and parallel; when the first coat is dried, apply another in a direction across, or at right angles with the former. A large paint brush will be found useful for corners and intricate places. Those who have never whitewashed must not be surprised to see the work look very badly while it is wet; the effect can only be judged of when dry. With a little practice, the operation can be done without spattering or letting a drop fall. Stir the whitewash occasionally, dip the brush in perpendicularly, and then draw it across the wire above spoken of, so as to leave as much in the brush as it will hold without drooping. Salt, white vitriol, starch paste, and other things are added with a view to prevent the wash from rubbing off, but there is little whitewash that will not rub off. For nice work, the lime may be slaked several weeks before it is used. A thin pellicle or crust of carbonate of lime will form on the surface, which is to be skimmed off, and then the wash may be poured off from the gritty particles which settle to the bottom.

KALSOMINING is a term given to another method of whitening walls. It is Paris white, which is a very fine whitening or chalk, to be had at the paint and drug stores, and put on with a glue size. The proportions are a quarter of a pound of *white glue* to six pounds of Paris white. Put the glue in water enough to well cover it, and let it stand until perfectly soft; then put the vessel containing the glue into a kettle of hot water, and stir until it is thoroughly dissolved. Put the Paris white into a pail, add hot water gradually, stirring all the time, until it is brought to a smooth, creamy consistence; add the dissolved glue, and then water enough to thin it sufficiently to work well with the brush. It is applied in the same manner as whitewash, and is used for hard-finished ceilings and walls that have become discolored.

Allen's "New American Farm Book,"—Allen's American Farm Book has been one of the standard farmer's hand-books for twenty years. It was a real hand-book, where one might go for reliable information about a thousand and one matters of practical or farm policy. This work is still valuable, but not up to the times, and as its author, Mr. R. L. Allen, could not give time to its revision, this was undertaken by his brother, Hon. Lewis F. Allen, the distinguished farmer of Niagara County, editor of the American Short-horn Herd-book. *The New American Farm Book* is just published. It contains much of the same matter as the other, but is greatly enlarged, and full of suggestions from the rich experience of its editor and reviser. It contains 526 pages. Published by Orange Judd & Co. Price, \$2.50.

Our Young Folks.—The March number of this boys' and girls' magazine is at hand, and as fresh and bright as a spring morning. This journal combines amusement with instruction in the most happy manner. There are pleasing stories, little poems, puzzles, and the like, and besides these, excellent articles on Glass-making, the Mariners' Compass, etc. The wonders of glass manufacture, cleverly told and illustrated, give just the kind of knowledge every boy and girl should have; indeed, most grown people might learn something from the article. The history of the production of things in daily use has a great charm for intelligent youth. We are glad to learn that the magazine is meeting with the success it deserves.

Iona Island.—This Island, which has been so long identified with the cultivation of the grape, is sold by Dr. Grant to Messrs. Hasbrouck & Businell.

Oils, Safe and Unsafe.—On several occasions we have pointed out the dangerous character of the Kerosene oil generally in use, and stated that that only was safe which would bear to be heated to 110° before it would take fire. As very little in the market would stand this test, there has been a general alarm felt in regard to the matter, and many letters have been received asking how good oil could be obtained. Mr. Charles Pratt now offers an oil, which, according to the testimony of competent chemists, will bear heating to 118° to 128° before forming an explosive vapor, and to 134° to 156° without burning. This, then, indicates perfect safety as far as danger from explosion goes. As it often happens that dealers purchase good oil and mix it with benzine and other dangerous fluids, Mr. Pratt has adopted a new plan of packing. Instead of sending it out in barrels, he puts his oils in cans, which are closed with a soldered seal of thin metal. Each can is placed in a box, and the whole is as readily handled and transported as a box of soap. The perfect seal is a guarantee that the oil has not

been tampered with. We have known Mr. Pratt from the time when he was struggling to acquire an education under difficulties, until he became a member of one of the largest establishments in the country, and have confidence in his integrity. We depart from our usual custom in especially commending a particular manufacture, as the welfare of the whole community is concerned, and it only needs that Mr. Pratt's endeavors to furnish a safe burning oil should be successful, to induce all other manufacturers to follow his example.

Rogers' Grapes.—Mr. M. B. Batcham writes that, in compliance with the request of the Lake Shore Grape Growers' Association, Mr. E. S. Rogers, of Salem, Mass., has proposed the following names for the leading varieties of his hybrid grapes, hitherto designated by numerals: No. 1, Goethe; 3, Massasoit; 4, Wilder; 9, Lindley; 14, Gartner; 15, Agawam; 19, Merrimack; 28, Regna; 41, Essex; 43, Barry; 44, Herbert.

Sweet Potatoes.—"S. F.," Green Co., O. A bushel of potatoes will produce from three to five thousand sets, which are to be removed as soon as well rooted. The quantity required for your bed can be estimated by measuring the space covered by a bushel of potatoes laid out so as to nearly touch one another. Only the large potatoes are split lengthwise. Around New York the beds are made about the first of April.

Van Buren's Golden Dwarf Peach.—"A. M. H.," Oregon, Ill. This is not a "lum-bing." It is more of a pomological curiosity than a variety to be planted for profit. It is pretty for small gardens, and bears a fruit (cling) of fair quality and great beauty.

Horticultural Protection.—A committee of the Lake Shore Grape Growers' Association has petitioned Congress to pass a law to grant patents for new varieties of plants. We regard this movement as premature, inasmuch as horticulturists have not yet fairly considered the subject, and when a movement of this kind is made there should be unanimity of action. Already Mr. P. Barry has entered his protest against the scheme, Mr. A. J. Caywood has replied at length, and the articles of the two indicate anything but harmony of views. Mr. C. has printed both articles in a small pamphlet, which he sends us, and asks the influence of the press in favor of the proposed law. We think it would be wiser to leave the whole matter until the meeting of the Am. Pomological Society in September next. There is much to be said for and against the proposed law. Both sides should be fairly heard, and the subject duly deliberated. It is too important to be hastily disposed of.

Tree Invigorators.—Circulars of these are continually sent, asking our opinion of the merits of the stuff advertised. One of these precious documents says: "When applied to the tree it penetrates every pore, destroying the worm in the heart, and by connecting with the mineral substances of the earth destroys the cause, and prevents the creation of any destructive insect,"—and more of the same sort, all utter nonsense.

Sundry Humbugs.—It is again necessary to call attention to the "Music Box Swindle." Every week some new complaint is sent to us, seeking redress. The musical instrument, properly called the Music Box, is not to be had for \$1.00 anywhere, no matter of how poor quality; and offering a "music box" for \$1.00 is an attempt to swindle. Paul & Paul, who are among the largest advertisers in the business just now, are not to be found at the number given. One of our readers sent \$1.00 to said firm, and got in return a ten-cent toy known as a "French Harp," or "Harmonica." He was induced to send for the "Music Box" by seeing it advertised in an "agricultural" journal. It is a shame that agricultural journals, or any other, should admit the advertisement of such things.... "Alaska Diamonds" are now offered by unscrupulous men, who are taking advantage of a desire for tawdry jewelry, and flooding the country papers with their advertisements of "Alaska Diamonds." A firm in Hartford, Conn., and Messrs. Monroe & Co., New York, are perhaps the largest dealers. The following, from the New York Tribune, will show the plan of operation pursued by Monroe & Co.:

"In their advertisements they state that, when forwarding them an order, it is necessary to inclose them a ring, to enable them to select one of the proper size. When they receive an order containing a size ring, if the ring is of any value, they retain it, and send the "Alaska diamond" ring, the price of which is collected on delivery. A case of the kind occurred a few days since, where a lady, seeing one of their advertisements, sent the "firm" twelve dollars, and a gold ring for a specimen of the size wanted. She received the "diamond" ring, worth, probably, twenty-five cents, but not the one she had sent them, which she valued at five or six dollars, and as she did not care to lose it, she wrote on to the "firm," and receiving no reply to her communication, wrote to other and responsible parties, who, after making diligent search and inquiry, came to the very

reasonable conclusion that "Messrs. Monroe & Co., Broadway," importers of jewelry, were a myth, as no such firm could be found at the place designated. No doubt they had hired an office at the above-mentioned number, and after this exposure has been forgotten by the public, will turn up in some other part of the city, and under some other name, circulate throughout the country advertisements, in which they will offer tempting baits, and those who are green enough to bite at the hook will have the same old story to tell us."

We advise persons who wish diamonds to buy them of regular dealers. Diamonds, like gold, have a fixed value; and any thing of low price, claiming to be a diamond, is false. Look out for Land Agents advertising land in Southern States by lottery. Lotteries are bad at best, but a lottery in which a plot of unknown land in an unknown location is the prize seems perfectly absurd. "Miller & Co." seem to have been driving quite a business in this line for the past few weeks, and we warn persons to have nothing to do with them or their lottery. The "recipe humbugs" are quite popular, and call for notice. We have before us no less than four of these recipes. They all consist of a "little powder," made from some unknown plant or unheard-of mineral, or both. One is for making "Beautiful Sugar" from Sorghum Syrup. A second is for making "Italian Cheese," and is imitation of the "Butter Powder," proposes to make a pound of cheese from a pint of milk. A third is an "Extract of Butter Plant," if any body knows what that is, and is used to make had butter good, sweet, and fresh; and the fourth for curing colic in horses! We mention the last-named to call attention to the fact, that many daily and weekly journals, that ought to do better, have published the same recipe, with no other warrant as to its reliability or efficacy as a remedy than the assertion of the person giving the recipe. We have taken pains to learn if the ingredients named, and which the writer says may be had at any drug store, were to be had in New York. We not only did not find what we went after, but some of our best chemists and pharmacists did not know of the existence of such substances. We therefore think it safe to say, that the whole thing is a "sell," or intended swindle. Gumbidge & Co., New York, are old offenders. Having tried everything, from patent medicines up to "Music Boxes" and "Charmed Caskets," they have now come out with "Greenbacks" for sale, at the rate of \$5,000 worth for \$5.00, which is very good of Mr. G., only the trick is too old to take. The "Express Package" swindle seems to have revived under the very impressive name of "N. Y. Central Express Company." Z. W. Nulock, Agent. They send a letter to the address of any person as follows: "To your address has been received (one package or box) upon which there are (\$2.00, \$3.00, or \$4.00) charges. Please send the same without delay. Unless paid within 20 days, the goods will be sold at public auction," etc. In some instances, we have no doubt, persons are found verdant enough to send the money, and that is the last they hear of it or the Express Company. As fashions repeat themselves after a term of years, so do the various forms of humbug. This one turns up after a long repose. We thought we had buried the old offender years ago.

Our Poultry Premiums.—The fowls offered as premiums for subscribers to the *Agriculturist* have been, as our readers are aware, in the yards of Mr. J. H. Mabbett, of Tarrytown, who has removed to Vine-land, and engaged in other business. The Paris Exposition prize trio of Houdans, and most of the imported La Fleche and Houdans have been transferred to the poultry yard of Mr. John Salisbury, Jr., of Nyack, N. Y. The Mallory Paris Exposition prize trio of Creveceurs, with some of their stock, also some of the La Fleche, Houdans, and Brhmas, have been placed in the yards of Mr. Geo. Smith, of Holliston, Mass. These gentlemen are careful and successful breeders of fine poultry. They will hereafter supply orders for premium birds, and our friends may be sure of getting pure stock.

The Insects of Missouri.—The First Annual Report of Charles V. Riley, State Entomologist of Missouri, comes just as we go to press, and too late for us to give it sufficient examination for such a notice as the importance of the work demands. Mr. Riley is admitted to be one of our most accurate and industrious entomologists, and the Report before us bears marks of a vast amount of labor. It is no doubt creditable to him and to the State, which, with enlightened liberality, has made it possible to produce such a work. We congratulate both parties upon their fortunate relations, and shall probably have occasion to refer to the work again.

Trichina.—When we published, a few years ago, an account of the minute parasite which is apt to occur in pork, some journals made merry over it, others denied the existence of the Trichina altogether, while many private letters remonstrated with us for slandering the animal which produces pork. We only did our duty, knowing of the occurrence of several cases, in showing

what the trouble was, and in cautioning our readers how to avoid it. Since then, deaths from Trichina have been sufficiently numerous to excite general attention, and those journals who accused us of making a "sensation" have been obliged to record the facts. A number of cases have occurred the past winter. Near Rome, N. Y., three died and five were dangerously ill, all in one family. In New York several in one boarding-house were made severely ill, and sent to different hospitals. Two died, two others are very sick, and the fate of the others is not known. The last case we know about from one of the physicians, and saw the parasites in a fragment of the muscle. All these cases are traceable to the use of raw ham and raw smoked sausage. Those who eat pork thoroughly cooked need have no fear of Trichina, even should they be present, but let those who will eat it raw, even though it be salted or smoked, or both, know that they do it at the risk of their lives.

Editorial.—Mr. A. S. Fuller withdraws from the editorial charge of the *Whitlock Exposition Recorder*.

Music should everywhere be a household institution; scarcely anything can equal it for giving pleasure and refinement and making home attractive. He who brings it within the reach of all is a public benefactor, and such we name Mr. B. W. Hitchcock, who is publishing the popular songs, etc., at only 5 cents per copy, neatly printed and arranged for the piano, etc. Who wouldn't sing and play, when it costs only half a dime?

Southern Pomologists.—Col. Marshall P. Wilder and a party of pomological friends, on their return from a tour through the Southern States as far as Florida, report the fruit-growers there as being as wide-awake and enthusiastic as ever. A large attendance from the South is expected at the meeting in Philadelphia in September. The fruit lists for the Southern States need thorough revision. The matter will be facilitated if those who have any suggestions to make will communicate with the Secretary, F. R. Elliott, Cleveland, Ohio.

Breck's Book of Flowers.—Mr. Breck is a gentleman who has grown gray among his flowers, but he talks about them with the enthusiasm of youth, tempered by mature experience. No work is better suited to those who wish to beautify their homes with a garden. Mr. B. tells of his failures as well as his successes, and all in that familiar way that is so pleasing to the novice. Price by mail, \$1.75.

Death of Willie Judd.—Mr. Judd suffered a great bereavement on Feb. 23, in the death of his eldest living son, William Orange, aged 13. (He had previously buried three eldest sons). The disease was a very unusual one, originally caused by some slight obstruction of the vermiform appendage of the colon, probably a small fruit seed, which resulted in general peritonitis. Even this almost always incurable disease, treated by the highest medical skill that New York could furnish, was ultimately conquered, but, as a result, a deep-seated abscess was formed which no human skill could reach, and after twenty-five days of intense suffering the strong physical frame wasted away. Willie was a very promising boy, having been favored with robust health and physical development, as well as a remarkably matured mind for one of his years. He had an extensive collection of coins, gathered abroad by himself, including over 200 ancient Roman coins, some of them dating back prior to the Christian era. With these and their history he had made himself quite familiar. His portfolio and scrap-book contain many compositions and notes of travel that would do credit to an adult mind. His manly and courteous deportment and kindness of heart will long be remembered by those who have seen him frequently at the Office, and by his schoolmates. One of the most consolatory memories to the bereaved parents is the fact that for full four years he had been a constant attendant upon the church communion, and a thorough Christian, and that he died, as he lived, confident of his eternal salvation through Christ. The design of Providence in removing one so promising for future usefulness is inexplicable to human understanding, but His ways are not our ways, and "He doeth all things well." B.

Good Books.—On page 149 of this number is a list of Rural Books offered by our Publishers. Both interest and profit will be found in these volumes. We have room to call special attention to only a few of them. The "Small Fruit Culturist," by A. S. Fuller, is a beautifully illustrated work, wholly devoted to small fruits. It was prepared to meet the wants of that rapidly increasing class, who, while they would gladly avail themselves of the results of experiments and observations of cultivators, have heretofore been unable to do so, because that information has been scattered through a thousand volumes, inaccessible to them. This book can be had

for only \$1.50. The "Grape Culturist" is another book by the same well-known author, and is the most practical work on the culture of the Hardy Grapes, with over one hundred excellent engravings. Price, \$1.50. "Gardening for the South," by the late Wm. N. White, of Athens, Ga., is an admirable treatise on gardening in general, as well as at the South in particular, and will rank among the best horticultural works of the day. Price, \$2.00. "Quincy's Mysteries of Bee Keeping" may be had for \$1.50, and contains the results of thirty-five years of successful experience, with full, plain, and practical directions for all details of Bee Culture. But our readers will select for themselves from among the many valuable books to be found in the list.

Gardening for Profit—Practical Floriculture.—These two works, by Mr. Peter Henderson, are valuable additions to that style of horticultural literature that was commenced by Fuller in his *Grape Culturist*—a cutting loose from foreign authorities, and presenting the author's own way of doing things, in plain language, and without any "secrets" held in reserve. The first book by Mr. Henderson, *Gardening for Profit*, so completely met a great want, that its sale is something astonishing. The second work, *Practical Floriculture*, is to the flower grower what the other is to the grower of vegetables, and meets with a hearty acceptance. Aside from being gratified at a pecuniary success, the publishers feel pleased that they have been able to present the public with works so thoroughly practical and useful, as well as thoroughly American in the treatment of their subjects. Price, \$1.50 each, by mail.

Cornell University.—We learn that the Hon. John Stanton Gould has been appointed Professor of Agriculture at the Cornell University.

The Prairie Farmer in a Bad Way.—Emery must have been away and left the boys to keep shop; at least we judged so on seeing an engraving from one of our books—well, say appropriated without a word of credit. We are accustomed to such treatment from "one-horse" papers, but in a journal so able and usually so courteous as the *Prairie Farmer*, we do not look for it, and are quite sure it was done by some one who did not know the custom with all respectable journals.

The Potato; Origin, Uses, Diseases, etc., is the title of a pamphlet by the Rev. W. T. Wylie, Newcastle, Pa. Mr. W. with a view to interest his parishioners in improved methods of culture, has published this little hand-book, and offers \$100 as a prize for the best essay on potato culture. The essays are to be sent to B. K. Bliss & Son, 41 Park Row, New York, before July 1st, 1869. Price of pamphlet, 20 cents.

The Early Rose in England.—Shirley Hibbard, editor of the excellent *Gardener's Magazine*, and an authority on Potatoes, says of the Early Rose: "A fine potato on the table, a good color, a most delicate texture, and the flavor equal to that of the old Ash-leaved Kidney, perhaps even superior to that standard of high quality."

How Horticulture is Encouraged in Boston.—Josiah Stickney, Esq., gives \$12,000 in trust to the Mass. Hort. Society for thirty years, the income to be devoted to increasing the library of the Society. It is a pleasant little way those Boston "princes" have.

Osage Orange Seed.—"Hodge Fence." See page 21, January, for directions to sprout seeds. A correspondent, whose letter is not at hand, says that seeds that have remained in the ball all winter, if planted as soon as washed out, will grow without being sprouted.

Moore's Rural and the Farmers' Club.—Moore's Rural New Yorker came to N. Y. City a few months ago, which was in obedience to the laws of gravitation; it at once wonderfully improved in matter and manner, which shows the effects of getting into good company, but—alas, that it is necessary to mingle blame with our praise!—it speaks slightly of the Farmers' Club. We have in our day good-naturedly poked fun at this remarkable assemblage, but we never were half so severe as the Rural. It has been a notion of ours that the Club was kept up in good part for our amusement. Now, Mr. Rural, don't try to annihilate it. Who knows what the farmers without farms, doctors without patients, and reporters without anything to report, would do if they could not get together once a week and "babble o' green fields" and cancer cures?

Foreign Help.—"Subscriber," Waterford, Va. Address the Commissioners of Emigration, Castle Garden, N. Y. If it is desired to engage a number of persons, visit Castle Garden and do the business yourself.

Breeding of Fur-bearing Animals.—"J. E. S.," Bridgeport, Conn. We entertain no doubts as to the possibility of profit—may, its certainty—under favorable conditions. Rabbits are bred so as to bring in a very fair income in England, both their flesh and fur contributing to the result. Where fish offal is abundant, we believe that *Cats* in large numbers have been bred profitably, solely for their fur,—the varieties chosen being, of course, those whose fur brings the highest price, namely: clear gray ones, with dark, tiger-like bands, and black ones. A variety of food would doubtless be desirable, but butcher's offal and fish of some kind are most acceptable to the animals. We know nothing of the particulars of this curious branch of industry, but would be glad of practical hints. A statement about a *Minkery* in the central part of the State of New York has gone the rounds of the papers. The attempt was on a rather limited scale, but we see no reason why the effort to breed minks should not succeed.

Domesticating Woodcock and Snipe is done in England, as a matter of fancy rather than of profit. The young ones, when captured, are stuffed with worms, in order to teach them to eat, the worms being put in at the side of the mouth, and crowded down with a feather. As they get older, they will eat live worms from a shallow vessel, covered slightly with mud. One wing must be clipped, if the birds are to be kept in confinement, or they would surely escape.

Horses and Cows may be Kept in the Same Stable without the least injury to either. The inquiries from different parts of the country we have received on the subject, though once answered, seem to demand another response, and we here add our most positive assurance to the above simple statement.

Hens Eating their Eggs.—R. B. Stafford asks how to break hens of eating their eggs. Supply plenty of finely pounded oyster shells, or, if these are not handy, provide bones; besides, some pork scrap cake daily. Give at the same time an abundance of wheat screenings or other grain, and good, soft, secret nests. Allow no eggs to freeze, use artificial nest-eggs, and remove all eggs daily. Hens learn this from finding broken eggs.

Gapes in Chickens.—Anderson Campbell, of Tennessee, writes the *American Agriculturist* that he finds from experience that by changing roosters every year, getting them from stock not akin to the hens, he is not troubled with gapes. Whether this is a preventive of gapes or not, there can be no doubt of the advantage of introducing new blood into the poultry yard, especially if care is used to get thoroughbred roosters of the best kinds. Stock from such is better able to resist disease of all kinds, than that from closely related progenitors.

Sending Chickens to the Rocky Mountains.—Mrs. J. A. Shreve, of Denver, Col., has received by express a trio of Brahmas in good order from G. H. Leavitt. The express messenger reported encountering a temperature of twelve degrees below zero on the plains. Provision was made for a supply of food and water. The fowls were sixteen days on the trip, and the express charges were \$25 from New York to Denver. This is the first importation of Asiatic fowls to the Rocky Mountain States we have heard of. The natural way to get stock of these breeds on the Western coast would seem to be to bring them across the Pacific, though by this means few are obtained of superior quality, unless selected by a poultry fancier on the ground.

Curelio.—"J. H. H.," Delphi, Ind. The Curelio is able to fly, though it may sometimes prefer to climb. A pretty full account of the insect is given in the *Agriculturist* for May, 1864.

Cabbage Caterpillars.—G. W. Grant, Oceana Co., Mich. We cannot tell, without a description, which "worm" it is that injures the cabbages. Try trapping, if salt, lime, and plaster have failed. Break off a cabbage-leaf and lay it over the head at night; the worms will go under this for shelter, and may be destroyed early in the morning. A coop of chickens will help keep them in check.

Painting a Barn.—J. Maught, Frederick Co., Md. The sooner a barn or any wooden building is painted after its erection, the better. It ought to have a priming coat before the scaffolding is taken down, and after that it may be left six months, if necessary. This coat should be of good boiled oil, thinned with a little turpentine or benzine, to make it work easily. It is unnecessary for the priming to have much body. As soon as this is dry, or later, if more convenient, we may

paint the building. Pure white lead is the best and cheapest paint that has an enduring color. (The most lasting is black paint; lamp-black in oil, or coal tar asphaltum dissolved in benzine makes a very lasting black paint.) White paint may be tinted of any color, and a barn should never be painted white. By taking a little pains, some pleasant neutral tint may easily be formed, which will harmonize with the landscape. To choose a color, go to a spot where the soil is not dark and peaty, (it matters not whether it be clayey or sandy) tear up a sod, let the earth dry, and take that for the color of the barn; wet it, and take that for the color of the door and window casings, cornice, and corner strips. The house should be decidedly lighter than the barn, and usually of a warmer tint, that is, inclining a little more towards red and yellow than towards blue. Blues, bluish-greens, and grays, are "cold" colors. Distinct yellows, reds, pinks, or blues, are horrible; cream and straw colors are almost as bad, but are easily modified with a dash of brown to very agreeable light, warm, stone colors. Browns are pretty, if neither too dark nor too red. Grays are cold, and should be warmed with brown or yellow ochre. Neither dwellings nor barns should be darker than the surface of fresh-plowed ground where they stand, unless of stone.

A Conundrum.—"We desire you to answer the following: We were driving two horses close along by a ditch or ravine, perhaps eight feet deep. One of the horses gave the other a jostle which threw him off his balance, and he fell into the ditch, back down, heels up, and he fitted in the ravine so nicely that it was impossible for him to get out. We were twelve and fourteen years old, and six miles from home. What would you have done in such a case? Please answer.—AN EGYPTIAN." The 12-year-old should have held the other horse. The 14-year-old should have unbuckled the harness of the one that was down, made a rope fast to the shank of the under hind leg, hitched his mate to it, and started up—easy! If that wouldn't do, he should have gone for help.

Stone Lime vs. Shell.—"A. B.," Syracuse, wishes to know which is the better for the land, shell or stone lime.—Oyster-shell lime contains about one per cent of phosphate of lime, and is generally considered better than the lime made from marble or limestone. The latter is used extensively in Pennsylvania and New Jersey, because it is the most accessible. All the shells on the shore, if burned, would not meet the wants of these sections. Either is a good application, and ought to be much more generally used. Stone lime containing a large proportion of magnesia should be avoided.

"The Idea of Underdraining is New to Me."—So writes a Tennessee correspondent of the *Agriculturist*, and he would like to receive further instructions. We shall have much to say in the future, as in the past, on this important branch of farming. In the meantime he should get Waring's *Draining for Profit and for Health*, and if there is any thing he does not understand we will do all we can to throw light on the point.

The Chemical News is a republication of the English periodical of the same name, with an American addition. It is of great value to all who would keep posted as to the progress of chemical science.

Refuse of the Rendering Vats.—"I can get a hundred loads of the refuse from the steam-tank of a slaughtering house, but the stench is distressing to my neighbors. How can I cart it without offense?"—So writes an Indiana correspondent. This is probably the solid or partly solid residue, after the "soup" has drained off, the whole solid and liquid mass having been thrown out into a heap. It decomposes very rapidly, and must either be composted, dried upon the spot, or carted away. To cart it in its decomposing state, without at least partial deodorization, is impossible. Gypsum would absorb ammonia if scattered liberally over the top of the cart, but would not destroy the effluvia. If the mass be solid enough to sustain a covering of two or three inches of dry earth, thrown upon it after it is in the tight box-cart or wagon, this would be efficient. The fresh material might be mixed with lime without loss, provided it were to be composted with earth or peat, or put into the soil before a great while. If the fresh refuse is very liquid, it might pay to move it in tight hog-heads or boxes, without attempting to deodorize it. Why not hire half an acre of land, and compost it thoroughly, somewhere near the slaughter-house?

The Illustrated Register of Rural Affairs for 1869. By J. J. Thomas, Albany. Luther Tucker & Son, By some oversight this Annual was not noticed at its appearance some months ago. Our appreciation of this admirable series is shown by our

keeping it on our book list. Whatever bears the name of John J. Thomas is sure to be good, and this year's Register is no exception. A series of these Annuals is a capital thing to have in one's library.

Sugar in Louisiana.—"A. B. B." writes from New Orleans: "We are learning much from the North now even about our own peculiar crops, for your Western small sugar mills and evaporators are revolutionizing the sugar culture, which it was once thought only the very rich could undertake."

Prickly Pear.—"P." says: "In your interesting account of the Cactus family in the January number you failed to notice one very valuable property of the plant, viz.: if the leaves are bruised and placed in the kettles used in rendering tallow or lard, it will cause the candles made out of the same to be hard and firm even in summer time."

Special Fertilizer for Potatoes.—"F. W. B.," of Edenton, N. C., asks: "Can you advise me that within your own knowledge, you have known 8 bushels of ashes, 6 of lime, 4 of plaster, and 2 of salt, to the acre to be applied to Irish potatoes with success?"—We have never used these articles mixed in these proportions for this crop, but have used them all separately. We have no doubt that the mixture is a good one, and that it will produce very marked effects upon this or any of the hood crops. A half a ton of muck or peat composted with the mixture, and afterwards mixed with 100 pounds of Peruvian guano, would improve it.

Starch Mills.—In Northern New Hampshire, remote from railroads and markets, starch making is profitable. Thereabouts, there are said to be forty starch factories, each turning out fifty tons a year of prime starch, worth \$150 a ton. A half million bushels of potatoes makes 2,000 tons of starch, which sells for about \$300,000. Thus the community realizes 60c. per bushel for the potatoes. The farmer's share is, of course, much less, in cash, but he is benefited by having the manufacture going on in his vicinity.

Soils and Trees.—"G. W. G." If a nursery tree is well grown, has good roots, and well-ripened wood, we should not care whether it was produced on a sandy soil or a clayey one.

Food and Freight.—Mr. Josiah Quincy argues ably before the Social Science Association against railroad monopolies, and high freight tariffs. In some parts of Maine the high price of food caused suffering, while in Minnesota corn was 50c. per bushel. Ought the freight charges on bread-stuffs to be established by law? This is contrary to the spirit of our institutions. Will the establishment of new lines of railroad cure the evil? Ask the President of the New York Central.

Oil-cake Adulterated.—"F. G. C.," Danham, Ct., writes: "I want to purchase some extra feed for my cattle this spring. Is there any security for the purity of oil-cake?"—There is none but the character of the dealer of whom you purchase it. We have not heard any complaint of adulteration in this country, but it is quite common in England, where it is much more extensively used. The singular fact that we can buy in New York City meal supposed to be pure at just about the same or even at a lower price than we can buy the unground cake leads people to suspect fraud, but we think it is because only the hard, whole cake is used for shipping, while the broken or soft cake of equally good quality is ground for consumption in this country.

Field Peas.—"J. L.," Washington Co., Ill. Your "peas" are beans of some variety which we do not recognize. Several are cultivated in the South which are not known to the books. We advertise only in our advertising columns; your stock of seed is too small for you to offer it for sale as proposed.

Natural Inbreeding often occurs. "J. E. E.," of Gettysburgh, O., sends us a specimen from a white oak and red oak which had formed a perfect union.

A National Potato Growers' Convention.—L. D. S., Huron, O., suggests: "We have Grape Growers' Conventions, Poultry Shows, Strawberry Shows, Squash Exhibitions, etc. Why not call together the potato growers of this country, so that all may be benefited by the experience of each one? It would save much trouble and confusion if potato growers could get together and agree upon the proper name of each variety of potato; then we should not have 'Shakers' Fancy' under twenty different local names, as it now is, 'Early Buckeye' with a dozen local names, and so on."

The "Hen Fever."—Why should not people have the "hen fever?" The hens are happily free from it. From Christmas time to near spring, *fresh laid eggs* are worth three to six cents each—40 to 60 cts. per dozen—and rarely less than \$3.00 per hundred. From May to September, "Broilers," that is, full-fledged chickens that will weigh one to two pounds each, and usually three pounds to the pair, will sell for \$1.00 to \$2.00 a pair, alive, which is quite as much as we used to pay for sucking pigs for roasters. The demand for eggs is insatiable. The "transactions" in this city alone are estimated to amount to some \$3,000,000 or \$4,000,000 per month; and during the cool weather from September to April, the sales in the dead fowl market, not exclusively chickens, however, probably exceed those figures. The value of poultry-yard products in the whole country is said to be not less than \$100,000,000 a year. The best breeds for eggs are not the best as to winter layers. The best for flesh are not the best for eggs, nor are those which quickly attain marketable size the best for fattening for the fall and winter market. The most beautiful fowls are found among those famous as layers, yet this class includes also the homeliest. Each breed has its uses, each has its fanciers, some are in fashion now, others will be two years hence. Fowls which sell for \$100 or \$200 a pair are not rare. These are the phases and symptoms of the hen fever—the cure, a liberal investment in hens.

Fowls—In-and-in Breeding.—Geo. C. Van Allen, Henry Co., Iowa. The subject of in-and-in breeding cannot be briefly discussed. In the writer's opinion, you may, without fear of deteriorating your stock, breed the old cock to his own pullets as long as he is vigorous; and, probably, selecting every year one or two of the very finest cockerels, use them also, keeping the best pullets with the old cock for your breeding stock of each year. After he dies, or is too old, you will need fresh blood, and of course you will try to get a cock a little better in size, form, and markings, than any thing you have in your own yard, and you can afford to pay a good price for a pair or trio of such birds.

Buying and Selling Eggs for Hatching.—A hen will lay during the best season for raising chickens about three dozen eggs. If the hen is a valuable one, and any of the eggs are sold, the owner knows he is likely to sell chickens which may, if well cared for, win prizes away from his own. Hence he is perfectly right in putting a high price upon them. It is reckoned that the eggs a hen lays in the spring are worth as much as she is herself. A choice breeding hen of any breed, such as a discriminating fancier is willing to breed from, is worth \$8 to \$10, usually; hence \$3.00 a dozen for eggs is reasonable. It is safe to calculate that not over 30 per cent of eggs that are sent 300 miles by express will hatch. It is good luck if out of a setting a trio or pair of good fowls are obtained. Sometimes all hatch, sometimes none. The packing has much to do with success. The best way is to wrap each egg in paper, laying them in a box with cotton or tow, closely packed, not allowing the eggs to come near the sides of the box anywhere. If an egg be broken, it is the packer's fault; if it be jarred, it is probably the fault of the expressman. There is no redress unless obvious violence to the box shows inexcusable carelessness of the carrier.

House Building Questions.—Many letters, concerning minor points, have been received respecting the houses described last month, from those now building dwellings for themselves. We answer these letters together: The Tank, X, is made with top and bottom frame of 3x6-inch pine, cased or lined with tongued and grooved pine plank—the side planks set perpendicular—planned side out in front. It is lined with heavy sheet lead, with plumber's "tacks" at several points around the sides, to keep the lead from settling down. On three sides it is protected, first by the brick filling in, between the wall studding of the house, and then by double lath and plastering, with an inch space between each coating. Heavy studding from the ground up supports the great weight. The whole is covered, having a trap-door on hinges; the front has ornamented panels and mouldings.... The filtering cistern is 4½ feet deep, and 4½ feet in diameter, with brick center partition having several holes at the base. The receiving side is filled with alternate layers of 2 to 3 inches of charcoal (at the bottom), then thoroughly washed gravel, and coarse sand, ending with gravel at the top—giving 3½ feet of filtering material, and a free space at the top. As the rain water falls pure, the chief object of a filter is to take out dust and leaves lodging on the roof.... The Oriental furnace is "24-inch," from J. E. Liddle, 250 Water Street, New York City.... The wall studding is 4 inches thick, and the filling, brick on edge, leaving 2½-inch space on each side. The siding is of 1-inch board. The filling is carried up to the roof. The walls thus have two air

spaces, an inch board, and the plastering, which give a very effective protection against cold and dampness.... The working plans and specifications in full, asked for by several, would occupy too much of our space. Any items of this kind, in part or in full, will be cheerfully furnished by the builder, Mr. John Donald, Flushing, N. Y., at the bare cost of time and labor required to prepare what may be wanted by any one.... We shall from time to time furnish plans of cheap houses, as we have done in past years, although it is often difficult to get common-sense plans from architects, who are usually too apt to consult style at the expense of convenience. It is no small matter to combine the two well. The following numbers of the *American Agriculturist* contain plans and hints on smaller houses: May and October, 1859; March, 1860; April, 1861; September and December, 1863; April and July, 1864; February, March, and June, 1865; February, 1866; January, February, and March, 1867. For more expensive houses see Feb., 1859; Feb. and December, 1860; March, 1867. (These and other single back numbers are sent post-paid for 15 cents each).

Hydraulic Rams.—Mr. Finning, of Riverhead, asks about the use of hydraulic rams, to throw spring water to farm buildings on elevated ground. He desires to convey the water about 25 rods to a level 100 feet above the spring, and asks how it should be arranged, what material is required, what the cost would be, etc. It may be stated, in general terms, that for so high a lift a large pipe should be used to lessen the friction, and that the drive-pipe should have a length of about 40 feet, and a fall, if possible, of 10 feet, although even 5 or 6 will answer. Probably it will not be possible to throw up more than one-tenth of the flow of the spring, the other nine-tenths being wasted. We should recommend, for such severe work as this, two medium-sized rams working in connection with the same drive-pipe, believing that the strain will be much less than upon a larger machine, and the cost not materially greater. As to the pipe, it would probably be best to use for the first 50 feet of elevation one-inch iron gas pipe, and for the remainder of the lift, as being cheaper, one-and-one-half-inch wooden pipe, such as is made at Elmira, New York. In addition to the cheapness, the extra size would make the flow somewhat more easy. If the height is less than 100 feet, the amount of gas pipe may be reduced; if not more than 50 feet, it need not be used at all. Rams may be purchased in New York City. The cost depends upon the size and outfit of pipe. The *American Agriculturist* for Nov., 1858, contains a lengthy article, with illustrations.

Irrigation.—"M." of Monticello, Arkansas, asks directions for irrigating a cultivated garden with a living spring, situated 150 yards distant, and 15 or 20 feet higher than the garden ground. The water may be brought through an open ditch to the highest point of the garden, where there should be a small reservoir having a copious outlet away from the garden, so that surplus water will flow off without doing harm. The reservoir should have, just at the level of the ground, one or two small openings, through which to discharge, at the will of the operator, a small quantity of water. It will be better to distribute the water, if the land can possibly be so graded as to receive it, by a gentle flow over the banks of small ditches. The most satisfactory, as well as the cheapest means for discharging the water from these ditches, is by simply opening their banks with a hoe, so as to allow a small stream to be discharged at each point from which it is desired to take the water. The ditches themselves should be accurately leveled, and should remain permanently undisturbed. All the rest may be easily done by the gardener himself, whenever watering is necessary. This is the system that has been adopted in the very extensive experiments with the sewage water of the city of London, it being found much cheaper, and in all respects much more satisfactory than any complicated system of pipes and movable gutters. Hydropulps and water engines, with the pipes and hose that their use requires, are expensive and troublesome; and he must be a persistent man in whose garden they would not very early fall into disuse.

The Eclipse and the Corn Crop.—A good many honest souls really believe that there will be a short corn crop because there will be an eclipse of the sun next August. We cannot prove that there will be a good crop, but these are facts. The moon will cut off the light of the sun partly, for less than half a day, because it will be exactly between the sun and the earth. Once in every month the moon always comes near the same relative position, and almost every year it eclipses the sun to some part of the earth. The only difference between this year and any other is, therefore, that the corn crop, and every other, will get perhaps a quarter of a day's less sunshine than if the eclipse did not occur. The sun and moon, separately and conjointly, influence the tides;

perhaps, also, aerial tides and storms, and the weather somewhat. They may, or may not. Somebody *guesses* so; but it is no guess-work to say that the eclipse will in no way affect the corn crop for good or ill.

Gypsum is Sulphate of Lime—Plaster, or Land Plaster. It is sometimes confounded with Plaster of Paris, which is made from ground gypsum by heating it. This drives off water, and reduces it from a granular condition to that of an impalpable powder. Gypsum is the best name for the agricultural article, for it is not in condition to be used as plaster, and no confusion can occur.

Gypsum on Clover.—Gypsum seems never to come amiss to clover. Early spring is a favorable time to apply it. A good time is just after mowing.

Liquid Manure.—In ordinary use, this term applies to all manures in solution in water, and not to urine alone. The application of dung to the land may be most economically effected by spreading it on the surface, when its soluble parts will become liquid manure during the first heavy rain, and the whole of it must be dissolved before the plants receive it. The dissolving of the manures of the stable and their distribution by means of solution in water is troublesome, but there is no doubt that when judiciously used such dissolved manures are the best of all applications for grass lands. The amount of water required for sewage irrigation is something fabulous. At the London sewage farm nearly 300,000 tons were applied in a single season to 50 acres of land.

Muck.—The best way for "Tyro" to convince his "man" of the value of muck is, to compel him to use it. The plan suggested of mixing it with the liquid and solid droppings of the animals in a concreted cellar, there to be worked over by hogs, is the best. Some muck, when properly prepared, is worth as much as stable manure,—some is not worth nearly so much,—but all swamp muck is worth using, and the simple fact that it *dilutes* the manure, and gives a greater bulk of material which may be more evenly distributed over the ground is, of itself, almost enough to make its use profitable.

Manure from the Cattle Cars.—A farmer who receives annually many car loads of manure from the cars on which live-stock are transported to market, asks if there is any danger of his stock taking disease from it. We are not a little startled by the question, as the fact is, there is danger. No great danger, perhaps, because the great proportion of cattle, sheep, and hogs which come to market are sound, and of those which are not, very few are diseased in such a way that their droppings could cause disease in other animals; but there is some risk. Such manure ought to be at once well composted with muck or soil, before it is put where cattle can graze over the land where it is applied, or stand, lie, or work over it. With horses there is no danger.

Canada Farming—Peas instead of Corn.—Henry Strange, of County Wellington, Ont., puts Canadian farming in a "nutshell" when he writes: "Nearly all the best farmers here devote themselves exclusively to raising fine cattle and sheep, and fattening them in the most profitable manner; hence turnips are indispensable, and corn unnecessary, peas taking its place."

Is it Well?—"Is it well to mix cow's feed with their own milk?"—Yes. Why not? Milk is as good feed for cows as for pigs; and a cow will often suck herself if she can, and no harm ever came of it, to our knowledge, except the loss of the milk.

Sassafras and Saw-Brier.—G. A. Gowin, Chicamanga Co., Tenn., writes, that the sandy soils thereabouts are infested with sassafras sprouts and "saw-briers," which are very hard to kill, and asks how to destroy them. The only way is to keep the ground fallow one year, plowing and harrowing it so often that neither has any chance to *breathe*. If thoroughly done, one season will finish the sassafras, according to our experience, and we presume the brier would go too.

Roofing Materials.—"E.W." (no address given) has 12,000 square feet of roof to cover, and asks which is best—Plastic Slate, Asbestos, Gravel, or Tin. We think the Asbestos roofing the best of these, having a basis of coal tar; the gravel is immensely heavy, but good if well applied. The tin excellent, and safest of all, if kept well painted, and not used as a promenade.

Increasing Pasture Lands.—"Tyro." Rather than add more acres of pasture to the little farm, creating a greater demand for manure, it will be better to make the pasture already in use as rich as possible, and then cut for feeding in the barn, instead of pasturing.

Soil for Barley.—"What is the best soil for barley, and what is the usual amount of seed per acre?"—A rather light sandy loam, provided it is rich enough, is best for barley. The crop can be got in early, and it makes a fair growth before the drouth sets in. But if the land is poor, the crop suffers greatly from drouth on a sandy soil, and is frequently not worth harvesting. And the same is true on a wet, cloddy, heavy soil, that is not half worked. But on a well-drained, thoroughly worked clay loam, we usually get the best barley, simply because such soils are naturally richer than light land. If the sandy loam was equally rich in available plant-food, the barley would be equally good—and we think better. If sown with a drill, on good land, 2 bushels is sufficient; we have had a good crop from 1½ bushels, but prefer more than 2 bushels rather than less.

Bee Items.—By M. Quinby.

Starting an Apiary.—Some one writes: "Why not tell people who have never kept bees how to start?"—This is what I have been doing for the last fifteen years, and now there is a class advanced to "Fourth Reader," and anxiously waiting for the "Fifth." These must be kept along, and at the same time the primary class duly cared for. The first thing for beginners to do is, to procure some *reliables* work on the natural history and management of the bee, study it thoroughly, and come to an understanding, if possible, of what a swarm of bees will do under all circumstances. There is very much spurious teaching and miserable guess-work in instructions concerning the apiary. The man who writes without experience of his own, giving only what others have said, will copy an error as readily as truth. Or sometimes a person interested in some particular point in a bee-hive will so distort the truth, that it is hardly to be recognized. When a correct knowledge of the fundamental principles of bee-keeping has been acquired by careful study, the next thing is to get a hive or two of bees; if in movable combs, all the better. Obtain them, if possible, of some reliable person, one who knows what he is selling, and at the same time will not take pay for a worthless article. Bees in the box hive are more uncertain than other stock. No man can guarantee the future prosperity of any hive after it passes beyond his control. In purchasing stocks, reject the very heavy, and very light. A large number of bees is more desirable than heavy stores—especially at this season of the year. Locate them on the summer stand at once. If moved afterward, let it be for two or three miles. Moving short distances in the apiary is bad. Place the stands six to ten feet apart. Recent observations in regard to the spread of diseased brood dictates a greater distance between stands than formerly recommended. Provide hives for the swarms, and if you have not already movable combs, with proper study you should by this time be sufficiently well informed to desire them in some form. I will not now recapitulate the advantages of movable combs, nor describe the method of transferring combs, but will say it is a paying investment as soon as the advantages are comprehended. That the tyro may have confidence in his operations among the bees, he may want to keep them from his face and hands—from his face by a bee-veil, such as described in "Bee-keeping," page 227—from his hands by thick woolen or rubber gloves. Any one who expects to do much among bees should learn to handle things "without mittens," until he finds out that a bee sting is not "killing." After preparing a veil according to the directions referred to, punch the pith out of a piece of elder or other pithy wood, ten inches long, or bore with a slender gimlet through a suitable stick of wood, and insert this tube in the wire cloth opposite the mouth, by which it is to be held when it is desirable to use smoke to pacify the bees. Hard wood, nearly rotten, sawed or split into pieces an inch square, makes the cheapest smoke. Have it thoroughly dry, ignite one end, and blow the smoke in any desired direction on any demonstrations of anger.

The Bee Malady Again.—R. M. Argo, Lowell, Kentucky, says: "Since writing you a few weeks since, I find the malady is far worse than I then thought, all over the State. I believe that by the 1st of April, about all will be gone. Strange to say, my bees are all right to this time, also those of four of my neighbors, that were attended to under my directions. I am asked to account for it, but cannot, and I write to you for your opinion and advice. The bees did not starve; both honey and pollen are left—from fifty to seventy-five pounds in each hive. Some say it is cholera, others that poison honey was gathered last fall. Why did it not attack my bees, and those put up under my direction? I would here remark that mine were all fed last fall on sugar (coffee). Some think they were saved because they were fed, others that they escaped because they were Italians; in proof of which latter view, James Adams, eighteen miles from here, has ten Italian colonies all

right, while the black bees are all gone. It was my opinion last fall, as well as that of others, that bees would starve; that is why I fed mine. But they have died from a far different cause."—It was suggested in a previous number that the malady has continued to spread by the bees taking the honey from hives in which the bees were all dead. Mr. Argo's bees were "put up," and having had no chance to obtain such honey, escaped. From fifty to seventy-five pounds of honey were often left, when it had been supposed there was danger of starving. On the theory advanced, this case could be accounted for by supposing the hives first infected to have been robbed. Mr. Argo's bees being fed would account for their not starving when put up. That his stocks escaped because of their being Italians is not sufficiently proved, as another individual writes that his Italians suffered with the others. I would urge still further extreme care in not leaving a deserted or dead hive standing. Every man, with a live hive remaining, should see to it that all dead stocks within an area of several miles are removed. Personally inspect every hive, whether dead or otherwise, that such as are dwindling and liable to be robbed may be driven out, and all honey put out of the way of doing harm. With regard to the original causes, J. E. E., of Gettysburgh, Ohio, says, "There were great quantities of what we call honey-dew observed on the bushes in this vicinity." If others in Ohio, Indiana, or Kentucky, have noticed anything of the kind, I hope they will report, as it is corroborative of the suggestion made in February.

Cultivation of Broom-corn.

It is usually said that any soil which will produce Indian corn will produce broom-corn. But while this may be true in a general sense, a *profitable* crop of broom-corn requires cleaner, warmer, and richer land than that on which Indian corn is often raised with advantage.

Broom-corn does not often germinate as soon, or grow so rapidly for the first few weeks, as Indian corn. Consequently it is more liable to injury from weeds. It is of the first importance to plant only on clean land, otherwise the labor of hand hoeing and weeding will be very great, and if delayed for a few days the crop may be severely injured. If the land is clean, a Λ -shaped harrow, with a tooth taken out in the centre, drawn along the rows, will destroy the small weeds, break the crust of the soil, benefit the plants, and save a great amount of hand hoeing.

Broom-corn is often planted on the same land year after year, and when the land is very rich, such a course is most profitable, as the thorough culture of the crop makes the land cleaner every year, and there is less labor in hoeing. But when broom-corn is raised in rotation on the upland portions of the farm, a good plan would be to plow under a heavy crop of clover in June, and summer-fallow, and fall-fallow the land by repeated "cultivatings," harrowings, and plowings, to kill the weeds, and make it rich and mellow. A soil so treated would be likely to give double the growth obtained on land planted without any previous preparation. The expense of hoeing and cultivating would be greatly reduced, and the profits of the crop would be quadrupled. The yield varies from 500 lbs. to 1,500 lbs. per acre. A poor crop is grown at a loss, a good one at a large profit. It is said that few people have ever engaged extensively in growing broom-corn without ruining themselves. The fluctuations in the price may have something to do with this result; but it is not improbable that it is also due in part to the profits derived from a small crop planted on well-prepared land leading to an extensive planting on land in poor condition. The labor of hoeing would be far greater per acre on the latter, and if it could not be obtained in the right season would be still further increased, and would be likely to lead to discouragement, neglect, and failure.

If the land is warm, dry, clean, mellow, and rich, the crop should be planted early—say as early or a little earlier than Indian corn. As the plant grows very slowly at first, other things being equal, early planting is very desirable.

From the remarkable effect which plaster, on some soils, has on the growth of sorghum, it is probable that it will prove equally useful for broom-corn. Unleached wood-ashes are also highly recommended; but if the soil is in good condition, we should not look for so great an effect as from the plaster. The great point is to encourage the early growth of the plants and the development of the roots. And plaster, in the case of sorghum, and probably in that of broom-corn, seems to have this effect. In Mr. Harris' experiments on sorghum, on a light loam soil near Rochester, N. Y., the plot having no manure produced only one and a half tons of stalks per acre, while the plot having 250 lbs. of plaster applied with the seed at the time of planting produced nearly twelve and a half tons per acre. (See *American Agriculturist*, vol. 21, p. 351.) One ton of unleached hard-wood ashes produced only a little over eight tons. Of all the manures used, plaster was not only by far the cheapest, but had the greatest effect.

When planted by hand, it is better to mark off the land in rows, three feet apart each way, and drop a dozen or more seeds in the hill, and afterwards thin out to eight or ten plants; but when a drill is used, the rows should be three and a half or four feet apart, and the seed drilled so as to have a plant every six or eight inches. Thinning out should never be neglected, as it is very objectionable to have the plants too thick.

The crop *must* be kept clean. This is a point of the greatest importance. As the plants are quite small, a light cultivator, such as is used in the market-gardens, is far better at first than the ordinary corn cultivators. Start it as soon as the rows can be distinguished, and run it as close to the hills as possible, without smothering the plants or disturbing the roots too much. If the land is clean, and the rows are straight, the cultivator will leave little work for the hoe and fingers. If plaster has not been used with the seed, it may be dropped on the plants at the first hoeing. The plaster will probably do more good on warm upland than on moist bottom land. The cultivator should be used as long as a weed is to be seen. Much of the success depends on thorough and clean cultivation.

As soon as about half the seed is out of its milky state, pass through the rows and break down the tops about one foot below the brush, bending them towards each other. The object of doing this is to prevent the brush from becoming crooked from the weight of the seed. It also accelerates the ripening.

In this state the crop is "tabled." A man walks backward between the rows, and breaks down the plants from eighteen inches to two feet above the ground. Cut the brush close above the upper joint, and lay it on the "table" to dry. In fair weather, this will take four or five days. Then tie into bundles, and draw to the barn. The seed is separated as soon as the brush is perfectly dry. This is done by hand or by machinery, according to the extent of the crop. A small crop can be cleaned with a comb made by sawing teeth in the end of a board, and pulling the brush through until the seed is stripped off. The amount of seed varies from fifteen to thirty-five bushels per acre, according to the luxuriance of the crop and the time of cutting. The brush is better when the crop is cut while the seed is in the milk, but in this case the yield of seed will be light. The seed is quite nutritious, and is usually fed out on the farm. As a marketable commodity, it is very uncertain. Sometimes it is \$5.00 per bushel (for seed), and then again it is not worth 50 cts.

Raising Onions.

BY AN OLD SEED GROWER.

The reason why many do not succeed in their first attempt at raising onions is because they do not select ground which has been suitably prepared in the cultivation of the two or three previous crops. It is a mistake that onions do better, year after year, on the same ground, simply because onions follow onions. It is the higher manuring, more thorough pulverization and mixture of the soil and manures, and the cleaner and more careful cultivation required every year for onions, than is given to any other crop, that fits ground better for them.

Onions will undoubtedly succeed better many years on the same ground than most other vegetables, but there is a limit to this success. In Wethersfield, which has been so famous for its onions, the cultivation has greatly declined on account of the diminished product to the acre. The onions grown there now in many of the old gardens are small; they start quickly and grow vigorously the forepart of the season, but suddenly meet with a check when they should go on growing, even if there be no signs of smut or blast, and ripen too early to attain their former size and productiveness. Much larger crops are now grown in other towns.

One great trouble among beginners on new ground is that the onions will not bottom and ripen at the usual time, but continue to grow all the season and produce too many "stiff necks" or scallions. There are several causes for this. One is, the land, which is too poor to commence the cultivation upon, is heavily manured and plowed deep, bringing the poor subsoil to the surface. The seed in such soil comes up weak, if at all, and the onions grow very slowly until they get hold of the decomposed manure, when it is too late in the season for them to mature. Late sowing, a wet season, and foreign or bad seed, are other causes of scallions. If they do not begin to bottom before September rains, they never will.

The onion is not so particular about the character of the original soil as many suppose. Good crops are obtained on almost any soil, not too wet or too dry, except a stiff clay, light sand, or lumpy gravel. It is essential, however, that the land should have been made rich by the thorough incorporation of manures in clean tillage for at least two years from the sod. Corn, and then potatoes, carrots, or beets, are good preparatory crops. One or two heavily manured tobacco crops admirably fit the ground

for onions; old vegetable gardens are perhaps the best, except where cabbages have been grown, which are the worst of all crops to precede onions. Heavy or rather clayey, moist, not wet, loam generally produces the largest onions. If coarse manure is to be used, spread on twenty to thirty loads to the acre late in the fall, say about the middle of November, and plow it in not very deep; or use one ton of fish guano, spread on after plowing and harrow it in. If raw fish is put on in the spring, the onions will continue to grow until too late to ripen. In the spring, as soon as the ground will work, plow four inches deep, and spread on a good dressing of fine compost or 300 lbs. Peruvian guano or superphosphate of lime, and harrow it in well; back harrow and harrow again, and if not smooth enough, dress with rakes. When not manured in the fall, fine hog-pen or stable manure, free from grass and weed seeds, should be plowed in in the spring and the guano or other fertilizers harrowed in.

Every farmer and gardener should have a reel and line, and a marking rake. They will save a great many steps in laying out; besides, the straight and uniform rows enable the workmen to accomplish a great deal more in cultivating and weeding with the new implements.

The Reel, (fig. 1) may be made of wood, though iron (which may be bought) is preferable. When made of wood it consists of a square frame with projecting top and bottom pieces with holes through the centres to insert a

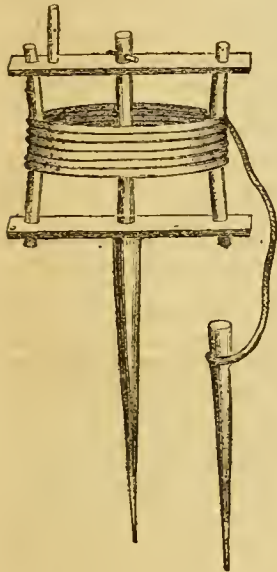


Fig. 1.—REEL AND LINE.

Bore four $\frac{3}{4}$ -inch holes 14 inches apart, commencing 2 inches from the ends; one hole in the centre; and holes at 12, 15, 16 $\frac{1}{2}$ and 18 inches each side of it. Make four teeth 6 inches long, an inch thick, and round them at the points. Secure them with a pin or key at the tops so they can be easily changed and adjusted to the different widths. The handle of the marker should be six feet long, split, and spread so as to form braces where it is fastened to the head.

Another form of marker is shown at fig. 2, in which the teeth are not movable; they are fixed at the desired distances, on both sides of the head. The land being prepared for sowing, stick down the stake, run off the line, and lay it where it is desired to commence. Adjust the marking rake to 14 inches, draw the outside tooth carefully by the line, and follow back and forth to the last mark until completed. After the ground is marked off it should lie a little while for the surface to dry before commencing to sow the seed. It covers much better, and the dirt will not stick to the wheel of the seed sower. The best onion growers now do not use seed sowers with a roller attached. It packs

the earth so hard that it bakes after a heavy rain and very much impedes the growth of the young plant, and it is not so easy in weeding to break the crust formed where rolled down flat as when the seed is covered by rakes or a light drag. It is of the utmost importance to get good seed—not only good, strong-growing seed, but seed that has been raised from good-sized, well-ripened onions. Imported seed cannot be trusted. The Second Early Red Onion is the best for a general crop. Sow four to six pounds to the acre—say about three seeds to an

inch or five seeds to two inches; cover half an inch.

As soon as the onions are up so they can be seen the length of the rows, run Comstock's Onion Weeder (fig. 3), through them, with the rakes adjusted so as not to throw the earth upon the young plants, and repeat often enough to prevent the growth of weeds. This will keep the ground perfectly clean between the rows. When they are just out of the double, or when the first weeds begin

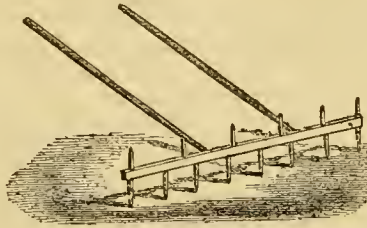


Fig. 2.—DRILL MARKER.

to show, after cultivating, the ground should be raked lightly, diagonally across the rows with a common wooden hay rake. This will break the crust, destroy the weeds in the rows, and give the young plants a good start.

Early in June, when the onions are 4 or 5 inches high, sow about three bushels to the acre of not very coarse salt broadcast over them. After the second weeding, spread on a good dressing of wood ashes. They require three or four weedings in the rows; but if pains were taken in marking to keep the rows straight and uniform, the Onion Weeder will run so close to them that there will be but few weeds to remove by hand.

When the tops have fallen and nearly dried down, draw four rows together with a wooden rake, raking two rows at a time toward the other two rows. Pull forks are sometimes used, but in careless hands they pierce a good many onions. They may remain as raked together several days, or until sufficiently cured to strip; cut the tops about an inch from the onions. If they are stripped while the tops are partly green they do not keep so well. After stripping, remove them to an outbuilding on a dry day, with a north-west wind, and spread over the floor, not more than a foot thick; turn them occasionally.

To keep onions in quantity through the winter: just before they are likely to freeze, and when perfectly dry, spread them 18 inches thick on a tight floor in a barn or outbuilding which is underpinned so as to keep the cold air from freezing them too severely next the floor. Leave a space of 2 feet next the walls of the building on all sides; spread a sheet entirely over them, fill the space with fine hay, (rowen is the best,) and tread it firmly; then cover the whole about two feet thick with the same, and the onions will ordinarily keep well. They should never be disturbed while frozen, but as soon as the frost is completely out in the spring, take off the covering and spread them all over the room, opening the doors and windows to give air in pleasant weather. If they are not well covered and the thermometer should fall to 15 degrees below zero, some of them may freeze to death, and be soft when thawed.

White onions are the worst to keep, on account of their gathering moisture so readily. They should be kept spread quite thinly on a floor in the light and where the air can circulate freely. Just before winter sets in, spread a few inches of straw on a floor, and place the

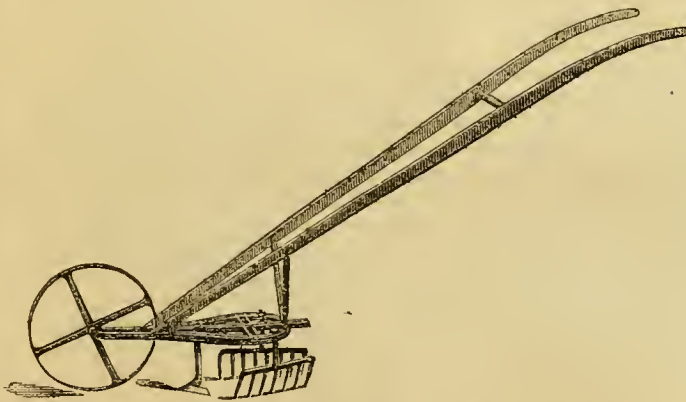


Fig. 3.—COMSTOCK'S ONION WEEDER.

onions on it 4 or 5 inches thick; let them freeze a little, then cover them with straw and let them remain undisturbed until spring; or put them into peach crates and cover with hay in the barn, or pile the crates next the walls of a cool cellar.—Onions are generally one of the most profitable crops, often yielding 400 to 600, sometimes 800 bushels, to the acre. Onions are now worth \$3.50 to \$4.00 per bushel. American seed, (and no other is safe to sow,) is in small supply and high. It looks as if onion raising would be profitable the coming season.

Tim Bunker on Being Smart Next Week.

"When are you going to bring home my sled, Neighbor Frink," I asked one morning as I drove up to Jake's door. There was a fresh snow upon the ground, fallen upon an old, well-frozen coat, and the sledding was first-rate.

"Well, I was calculating to bring it home next week, if that'll do," answered Jake, as he stood in the door chewing the last mouthful of his breakfast. It was eight o'clock, then, and he hadn't seen a creature in his barn or pig-pen.

"Next week!" I exclaimed. "You told me that ten days ago, and you haven't drawn a stick of wood since. I have got to draw ten cords of wood over to Shadtown, and I can't afford to lose this snow. If you can't bring that sled home this morning, I'll have to send for it."

"Send away, then, Tim Bunker, and next time I'll borrow of some decent man that's accommodatin'," said Jake, as he turned on his heel, and went into the house.

You see, Jake had had that sled already two months, during the best part of the winter. He came over one morning, and told me that his sled had broken down, and he only wanted mine just for a day or two; he would use it carefully and bring it back next week. I let him have it, knowing then, as well as I did afterward, that I should have to go after it, whenever I wanted it. Jake has a meek, honest sort of face, particularly when he wants any thing; and to look at him, you would think he was a deacon, if he was a little better dressed. I expect Polly has g'n him that look, for the world is indebted to her for pretty much all that Jake Frink has ever accomplished. Aunt Polly is smart right off to-day, especially in her tongue, and with that member and the broomstick she can make Jake smart almost any time. It's lucky that Jake got such a helpmeet, for he is naturally inclined to be smart next week, and if it hadn't been for Aunt Polly, I don't believe the world would ever have heard of him. In spite of her, he has always been full of next-week jobs. I knew him when he was a boy going to school, and setting rabbit traps. He was quick enough to get a lesson, if he would only apply his mind to it—that was the trouble. He was always the best scholar in his class next week; but to-day he liked tobacco, and red-pepper, and cider, better than his books. He did catch some rabbits and minks, but it was always too much trouble to set traps, and he never had half so many as he meant to next week. He didn't visit his traps regularly, and a good deal of the game caught was lost or stolen, for want of Jake's attention. His string of skins generally came out slim in the spring, and he always felt bad about it, for he meant to catch more game than any boy in the school. He was so certain that he was the smartest scholar in the school that he never half studied. He was always at the head of his class next week, but near the tail end to-day. He left school early, and carried his habit of being smart next week into his business. Folks all wondered how he ever got married, or got to doing any thing for a living, or how his way of doing things supported his family. He wouldn't have made out any thing if Aunt Polly hadn't been just as she was, to bring him right up to the scratch, with her sharp tongue, when things were getting behindhand. They find a great deal of fault with the women for having too long tongues, and talking too much. Aunt Polly's was the greatest blessing Jake had in his house. He has always been full of jobs next week, and none of them would ever have been finished if she

hadn't put the goads to him. He was five years shingling his house, and he wouldn't have finished it then, if a driving storm hadn't brought things to a crisis. The shingles were getting rotten, and patching did not stop the leaks. All the tubs and tin pans in the house had to be brought up into the garret every time it rained. The pans would overflow, and the water would go down through the plastering on to the carpets, over the chairs, into the bed-rooms, on to the beds, into Aunt Polly's wardrobe, and on to her clothes, spoiling every thing. The two days' rain made such a storm within, that Jake had to leave every thing else, and shingle. Matters have gone on much better in-doors than upon the farm, for Aunt Polly has some old-fashioned notions about her sphere, and don't follow Jake into the field.

I wrote you some years ago, that Jake Frink had brought water into his barn-yard by a lead pipe, and this was considered pretty good evidence that your paper was doing a good work, and making the farming world move. All the neighbors opened their eyes in astonishment, doubting if the age of miracles was really past. But he hasn't finished the job yet. He did not put any pipe into the trough to carry off the surplus water into the drain, and so it runs off over the top of the yard, making mud always, and in the winter ice, on which his half-fed cattle get many hard falls. Every time his cows lose a calf from this cause, or the slink fever, as he calls it, he determines to finish up this little job; but it is still waiting upon next week. The cure of the horse-pond made a sore place in Jake for several years, and he determined to drain a swamp back of his house, the same year I made my improvement. He actually dug the main drain, and debated a whole year whether he would use stone or tile. The tile carried the day, and were bought. They still lie piled up under Jake's shed, and he has been laying them down next week every fall since. It is well tile don't rot. If women's rights keeps on enlarging as they have done the last few years, I expect to see Aunt Polly under that shed, broomstick in hand, seeing that that job is put through. It will never get done by any other motive power. Slack as Jake is in regard to all business matters, there is one thing I have never known him to put off until next week. I don't want to slander my neighbors, or say any thing agin Hookertown; but we have one grogshop on the street, and Jake goes there as regular as sundown for his whiskey and tobacco. If he could only get the habit of putting off going there until next week, Jake Frink might be a very different man.

Now, Mr. Editor, I don't want you to think that I have any spite agin Jake Frink, or that he is a sinner above all others. I think there are spots in Jake's character, that, with a little rubbing up, would make good looking-glasses for some of your readers to see their faces in. Parson Spooner says pretty often that mankind are divided into two classes. I agree with him so far. The first class are those who are smart today, and do up things square. The second class are those who are smart next week. These may not be so numerous as Mr. Spooner's first class, but there is more of them round than I like to meet. The White Oaks is full of such people. There hasn't been an improvement up there in twenty years, not even in a coal cart. Every man's horse has a bobtail, because his father's had. I believe they tie up their broken harnesses with the same tow strings that their fathers used. I know they have the same old hats and pants stuffed in their broken windows. It has never been quite convenient to bring

home a few panes of glass and a little putty today. I can tell where one of this great class of people lives, as quick as a geologist could tell a fossil. When I see a farmer's carts, wagons, and tools, scattered all about his premises, I put number two agin him. He has been putting up a building to shelter these things for ten years, and has not done it yet. He is smart next week. When I find a man's barn-yard without muck or absorbents, I write him down number two. When I see the farmer's cattle with the bones sticking out, and the hair growing the wrong way, I say number two. When I see his fields covered with Canada thistles or wild carrot, I say number two. When I find his barn-roof leaking, and his stable-doors off the hinges, I say the smart man next week lives here. I am afraid if I marked all the sinners of this class, I should get out of chalk. These things are very bad—almost as bad as an issue of the *Agriculturist* not up to time. I wish they were as rare.

Hookertown, Conn., } Yours to Command,
March 15, 1869. } TIMOTHY BUNKER, Esq.

The Butter Market—Good and Bad Butter.

Butter is a more universal farm product than any other that can be named, except milk and grass; and of both these it is the culmination. Any one going through the country, sitting at the farmers' tables, and eating their butter, finds it, as a rule, excellent, well flavored, tolerably well worked, rarely a little too salt, seldom cheesy, and almost never in the least rancid, except possibly in the spring before the cows come in.

Ask the farmers if their wives and daughters make good butter, and they will almost universally express their candid belief that their butter is of extraordinary excellence,—not good simply.

What a different state of things the market discloses! Here we have the butter of these same wives and daughters selling at wholesale for 25 cents a pound, 30, 40 cents, and a little of it at 50 cents, and even 60 cents a pound. Fifty-five-cent butter, at the present state of the market, is classed as "prime." It is packed in tubs, has good color, good flavor, is well worked, well packed, and will keep. Taking this as a standard, (and it is the lowest standard a good dairy woman should be satisfied with, and not a very accurate standard either), what proportion of all the butter that comes to the New York market will reach it? how much is superior to it? and what will fall below? We estimate that it will include about the tenth part of all that comes from the close of one butter-making season to the commencement of a new one, and that not the fiftieth part of what remains will go above it. Butter superior to this is the product of a very few well-known dairies, which can almost always be depended upon, and dealers handle it with entire confidence. Butter worth over 55 cts. by the package has, of course, a fine color. When the trier is thrust into it, a drop of very slightly milky brine flows out around it, and as it is withdrawn, the air sucks back with a gentle *tz-s-p*. The trier is slightly bedewed with brine; the butter is waxy, firm, even in color and texture throughout, and has that indescribable fragrance which the dealers expressively call "rosy." It reminds one of white clover pastures in June and July, of every thing that is agreeable about a cow; and one thinks of the tidy dairy women, of the clean, cool, stone-floored spring-houses and dairies, and the odors of purity that pervade them. There are different grades of excellence even in this butter, and those who can discriminate have the first chance.

Very few commission merchants, though in

constant practice, can select the very best tubs from such "dairies," and when a consignment comes in, which they think is fully up to their own highest standard, they send to one of the few professional butter tasters, who buy for some of the first hotels and restaurants, that he may come, inspect the lot, and take what he wants. The past season was peculiarly unfavorable for the production of this kind of butter, and out of large lots of "extra," the taster sometimes finds only two or three tubs that will suit his fastidious patrons, and for these he pays roundly—several cents above the market price.

We might fill the whole paper with descriptions of butter worth less than the standard we have named. It is all either noticeably lacking in good qualities, or it exhibits positive bad ones. Some is beautiful to look upon, waxy and golden, but has lost the rosy odor of the fields, and gained something from the smoke of the kitchen, from milk spilt upon the floor of the dairy, from the damp mould of cellar timbers, or from the hog-pens near by—something, which may simply act as a neutralizer, while no bitterness or positively bad flavor can be detected. Other butter, from the same causes, is bitter, or smoky, or simply stale in flavor, and yet well worked, and appearing well. Then there is a large class of butter which lacks good flavor, and has more or less of bad, which is made at the creameries or butter factories. These establishments aim to employ the very best dairy folks, and to spare no pains in their processes to secure the best possible result. They fail, as a rule, from the fact that no means for rapid and perfect cooling of the milk as fast as it is drawn has as yet been generally introduced. The warm milk remains an hour or two in hot weather, shut up in close cans, which is enough to give it bad, foreign odors, which will be not only preserved, but concentrated, in the butter. We commend to those interested in the creameries the article on milk-coolers in the *Agricultural Annual* for 1869, adding that the inventor of the one most approved has produced another one much less expensive, though not so rapid in its operation.

Quite a large class of below-par butter is that which is *overworked*. Butter may be as surely spoiled by overworking as by not working enough. Such butter is often tallowy in cold, and greasy in warm, weather. The trier goes into the firkin with a dead feeling, and comes out as it would out of a cheese; no "*tz-s-p*," as the air sucks in; no dewy brine, or little; no fragrance of the pastures or sweet breath of kine; and yet it is not bad butter. The color is dull, however; it will grow pale on the outside, and this pallor will gradually work in, as soon as warm weather comes, and probably before, and it will gain a spermy or tallowy flavor, and begin to indicate rancidity. There is much less danger of butter being overworked than underworked. However, without discussing the general subject of butter making, we may not close without charging the butter makers among our readers not to be tempted to work their butter too warm; not to mash and grind with the ladle against the sides of the bowl, for this crushes the globules and makes greasy butter; not to salt, and work, and wash two or three times over, until the butter is as dry as a bone, and not moisture enough is left to dissolve the salt. All the water left in the butter should be a strong brine. If more salt be added, it will not be dissolved; if less be present, it shows either too much water, or it will be obvious to the taste that the butter is not salt enough. Hence overworked butter is either not salt enough, or the salt makes it harsh and dry.

The Wrens of the United States.

BY R. D., PHILADELPHIA.

In the United States there are nine species of wrens belonging to the genus *Troglodytes*, besides the *Regulus*, of which there are two species, the Golden Crested, and Ruby Crowned Wren, or Kinglet. The commonest and best known of our wrens is the House Wren (*Troglodytes adon*). Its peculiar places of building, with the partiality it shows to the habitation of man, makes it a general favorite. It builds in boxes or bird houses, or any convenient crevice, and has been known to take up its habitation in such odd places as an old hat, or the pocket of an old coat. There are

some things stated about this bird which are not altogether correct. It is said that two pairs of House Wrens will not build near each other, but will fight until one or the other is driven away. At our home, in Jersey, in the year 1867, we had three pairs breeding within the space of a hundred yards. Although they would not associate with each other, I never observed them quarreling. They all sought food in different directions. This species measures four and a half inches in length. The form of the bird is shown in the left hand figure of the engraving. The general color is a reddish brown, which is darker on the head, indistinctly barred with dark brown. The other species are mentioned in the order of their size.

The Rock Wren (*T. obsoletus*) is not much known. It was discovered in the rocky regions of the West, and was first described by Thomas Nuttall. It is nearly allied to the next, which it resembles in some of its habits. It breeds in the crevices of rocks, in which it also hides on being alarmed. The length of this bird is six inches.

The Great Carolina Wren (*T. ludovicianus*), although a common bird in the Southern States, it is not so with us. To find it, one must resort

to its favorite swamps, or rocks, near some brook or pond. Here it is easily found by any one who has ever heard its song, which, once heard, can never be forgotten. After satisfying itself with food, which consists chiefly of spiders, and such other insects as abound in

swampy places, it mounts to the top of some shrub, and there, with drooping wings and tail, it pours forth its loud and pleasing song. If disturbed, it drops from its perch, and disappears with the celerity of a mouse, running

of rocks, as well as under the trunks of fallen trees. The eggs are dull white, sprinkled with a reddish color, and are five or six in number. Length of the bird, five and a half inches.

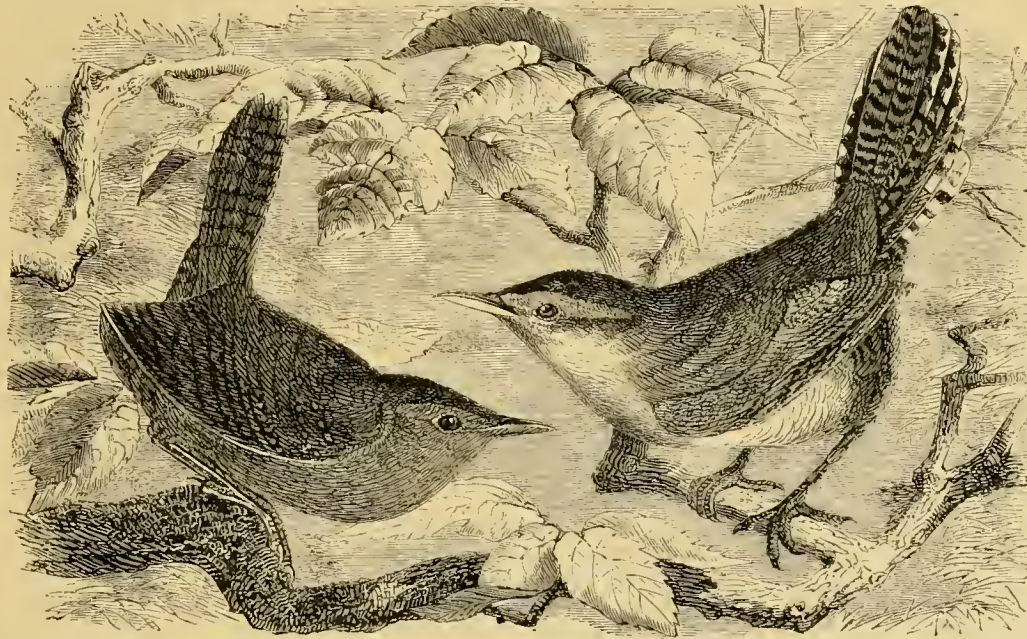
Of Bewick's Wren (*T. Bewickii*), represented at the right hand of the engraving, which is taken from Audubon, I can say but little, as I have never seen any living specimens. It is found sparingly in the mountainous parts of Pennsylvania and Virginia, and is more plentiful farther south. Skins of this bird measure about five and one-third inches in length.

The Wood Wren (*T. Americanus*), was discovered by Mr. Audubon. Although it cannot be called rare, yet on account of its retired habits, it is not often seen, and consequently but very little is known about it. It is said to breed in decayed logs, constructing its nest of moss. It lives altogether in the woods and thickets, until compelled to leave by cold and hunger. Length, five inches.

The Short-billed Marsh Wren (*T. brevirostris*), resembles the next in many respects, but differs from it in inhabiting the fresh instead of the salt water marshes. It is rare everywhere. With all my searching, I have not been able to find the nest of this species, and can give no description of it. Its length from tip of bill to tip of tail is four and five-twelfths inches.

The Marsh Wren (*T. palustris*).—While clamming one day in the Shrewsbury River, or rather waiting for the low tide, I was attracted by the song of this little bird, from a small island covered with long grass, not far distant. On approaching the island to see the bird, and try to find its nest, I was surprised to see not only one, but a great many. In fact, the whole island was full of them. As soon as we landed, they disappeared, running along the ground between the grass, chattering and scolding at our approach. On hunting for the nests, I found them very plentiful, but none of them con-

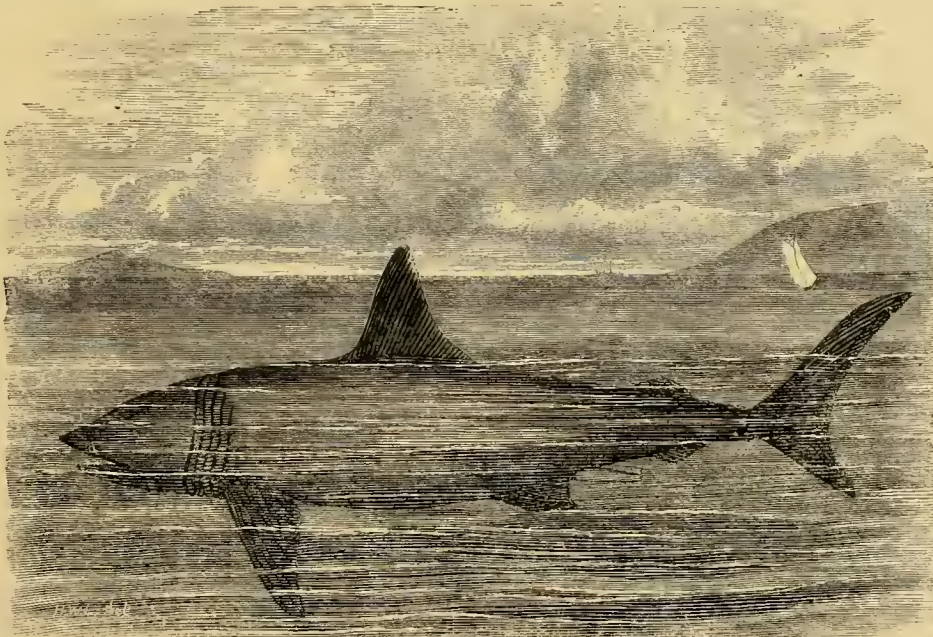
tained anything. The second brood had been hatched, and those we saw were the young with their parents. These birds roost in the nests until cold weather drives them south. The nest of the Marsh Wren is placed in the top of a bunch of grass. It is made round, with a



THE HOUSE WREN.

BEWICK'S WREN.

into holes and between the roots of trees, so that it is very difficult to find by hunting; but if the observer remains still it will come from its hiding-place, mount the nearest bush, and sing, if possible, with more energy than before. Early in the spring of 1867, while the snow was still on the ground, I had the good fortune to obtain a specimen of this bird in a swamp, near West Philadelphia. Before shooting it, I closely observed its habits. It was running along the edge of a creek, picking up different things that had been washed down. On seeing me, it instantly disappeared in a thicket, where



THE BASKING SHARK.—(See next page.)

it could have easily escaped, had it not been for its song, which betrayed it. A friend, Mr. Tull, who was with me, procured another one, which proved to be the female. These birds had evidently been living in the swamp all winter. The Carolina Wren builds under the edges

hole, just large enough to admit the bird; this is always placed on the south-west side of the nest. The length of the bird is five inches.

The Basking Shark.—The "Great Sea-Monster."

BY PROFESSOR S. F. BAIRD.

[Some months ago, one of the illustrated weekly papers had an engraving of a "Sea-Monster," with a sensational account of its capture. It was stated that the animal had been examined by Professor Baird, of the Smithsonian Institution, at Washington, and that he and other naturalists regarded it as something heretofore unknown. The skin of the animal is now in a New York museum, and large posters about the streets represent, in brilliant colors, a terrific combat between the monster and its captors. Suspecting the "fishiness" of the affair, we asked Prof. Baird to give an account of the animal, which he does, as follows.—Eds.]

"I take much pleasure in complying with your request for some information concerning a 'wonderful sea-monster,' now on exhibition in one of the museums of New York, which it is stated was captured near Eastport, Maine, last summer, after a most desperate resistance, during which it used certain 'legs' to propel itself along the flats. As the published accounts connect my name with the animal, as having seen it last summer, and being *then* unable to assign it a place among the known members of the animal kingdom, you think that I may perhaps be able to do so *now* for the benefit of your numerous readers.

To answer your inquiries in the fewest possible words, I will therefore say that the beast is the common Basking Shark, (as I told the showman when I saw it) well known to every sea-faring man; that in its preparation it is distorted and changed from its true shape; and that the 'legs' are the so-called 'claspers,' found in all male sharks, large and small, and which are flabby appendages to the reproductive organs. In their ordinary state, they are club-shaped, ending in a rather blunt point. When I saw the animal at Calais, last summer, they were not materially altered from their natural shape, but I have been informed that they have been ingeniously manipulated so as to give them the appearance of toes, perhaps with claws, and bent to represent the joints of limbs. There is, however, no bone, or joint, or division of any kind in them, and they are about as well adapted to aid in progression as are the teats of a cow.

This Basking Shark, *Selache*, or *Cetorhinus maximus* of naturalists, is abundant in the North Atlantic, and is frequently captured for the oil contained in its liver. It has the habit of lying or 'basking' sluggishly on the surface of the water, probably while asleep, and will then allow boats to come very close to it. It forms an exception to our preconceived ideas of a large shark, being perfectly inoffensive, never attacking man; and, in fact, it is believed to subsist on sea-weeds and minute marine animals. The teeth are very small, scarcely larger than those of a codfish. The eyes are small, and situated further forward than in other sharks. The gill openings are very large, and the intestines are much convoluted.

In size, this shark is among the 'monsters of the deep,' a length of thirty to nearly forty feet being frequently attained, with a proportional thickness. There is another shark found

in the southern seas, a *Carcharodon*, still larger, however, and really a 'man-eater.'

The Basking Shark is figured and described in Storer's Fishes of Massachusetts, Dekay's Fishes of New York, etc., although many of the illustrations are incorrect, from having been drawn from stuffed specimens. I send you a figure, taken from a memoir of De Blainville, which is, perhaps, as good a representation of the true animal as can be now found. You will observe, probably, that it bears but little resemblance to the 'Utopia Lake and Passamaquoddy Bay Great Sea-Monster.'

Walks and Talks on the Farm—No. 64.

It is not pleasant walking about a farm in the spring of the year, when the first three or four inches of surface soil is thawed out, and while the ground beneath is still frozen solid. But to me there is a fascination about it that is hard to resist, and few days pass that I do not take a narrow, long-handled draining-scoop and wander all over the farm, forgetting that there are such tiresome people in the world as printers and editors, or that life has any other duty but to get water off the land. With rubber boots and water-proof coat, the harder it rains the greater the pleasure. I like to see the water pour out of the pipes, clear as crystal, while that in the open ditches is as muddy as the Missouri River. This clear water must have left its fertilizing matter in the soil, and the plants next summer will get the benefit.

At this season, when the ground is frozen underneath, but when we have had more or less thawing weather, it is curious to observe the effect of underdrains. It would seem impossible for the water to soak through the frozen earth. But it certainly manages to do so, and that quite rapidly. We are digging drains now, and as there is considerable water in the deep furrows which we plowed out last fall, where the drains were to be cut, the men try to dam it up, but find it almost impossible to do so. It gets through or underneath the frozen soil on each side of the dam.

Another fact is worth observing. The soil above an underdrain is completely thawed out, while the soil on each side is frozen solid. With a narrow spade, or a light crow-bar, I could trace every drain on the farm. I supposed, at first, that the soil was thawed by the water soaking through to the drain underneath. But this is not the true explanation of the fact; for I find that in a case where, three years ago, I dug a ditch three feet deep, intending to tile it, but from insufficiency of fall abandoned the undertaking and filled up the ditch, the soil is thawed out just the same as where there are tiles underneath. It would seem, therefore, that the effect is due simply to the fact, that the soil has been stirred two or three feet deep. Whether this soil is frozen during the winter, I do not know, but it seems more probable that it does not freeze than that it should thaw out earlier in spring. Both these fields, where I have observed these effects, have been under the plow more or less since the drains were laid, three, four, and five years ago. It seems clear that deep tilled land is warmer in winter than land plowed only six or seven inches deep. The fact is important to the gardener, if not to the farmer. Apparently, a rather heavy garden soil, well drained and sub-soiled, or trenched two or three feet deep, could be planted earlier than a similar soil worked

only on the surface. It would seem, too, that trees, shrubs, and vines, on such deeply stirred land, would not suffer as much from severe frost.

One of the most convenient methods of reviving chilled lambs or little pigs is, to bury them up to their heads in a barrel of steamed chaffed hay or straw. It is comparatively dry, and retains the heat for a long time. A few bags of steamed chaff or cut straw placed along the bag, and between the legs of a sick cow, as she lies prostrate, will often do more good than medicine. It is generally well, however, to give a little medicine of some kind, and let it be understood that the heat is necessary to its effect. In this way, the men can be induced to apply the steamed chaff more hopefully and steadily. Few men have any faith in such a simple thing as rubbing the legs of a sick horse, or of applying heat to the body. I have not tried it, but I presume where there is no steamer, it would answer nearly as well to pour a pailful of boiling water over the chaff. But it would be necessary to keep a good supply of hot water at hand, as it is desirable to apply the bags of hot chaff for several hours, or until the animal gets better.

"Why do you object," writes an old farmer, "to the practice of putting the lines round the shoulders in plowing?" Because a skillful plowman, with well-trained horses, can get along quite as well with the lines on the handles of the plow; and an awkward plowman ought not to be trusted with so much power. He will attribute his own want of skill to the perversity of the horses, and will vent his anger in jerks and yells, that will soon spoil the best team in the world.—Let a skillful man take a pair of well-trained carriage horses, that will answer to the slightest movement of the reins, and which you can guide to an inch, or turn in a moment, or stop on the instant. Provide him with a properly adjusted steel plow that, in ordinary soils, requires a draft of only 350 to 400 pounds. The horses can walk along steadily with such a plow, and do a fair day's work with ease. On the other hand, let these same horses be placed in the hands of a man who anticipates trouble, and who, being a coward, says he "ain't afraid of them;" allow him to tie the lines tightly round his body, and if the horses, being unused to the work, are a little awkward at first, he will begin to pull and jerk before they get fairly started. They do not know what to make of such treatment. They are commanded to go, but at the same time the man behind braces himself with his feet on the ground, and his hands on the plow, to hold them back. They must pull four hundred pounds by the collars, and one hundred pounds or more by the bits. If anything goes wrong, they are jerked back with all the force the man can exert, say two hundred and fifty to three hundred pounds, and if he is *very* mad, perhaps five hundred pounds. When a man holds tight lines in driving a carriage, there is no loss of power, because what is pulled by the bits reduces the draft on the collars. But in plowing, all that the horses pull by the bits is a total loss. It is not only a loss of power, but it frets the horses, and they cannot do nearly as much work as if they had their heads at liberty. A few weeks of such treatment will utterly spoil a pair of carriage horses. Their necks become as stiff and unyielding as a post, and they will no longer answer to the reins. I keep eight horses, and there is not one of them that can be driven in a carriage with any degree of pleasure. They have all been spoiled by this

utterly abominable practice of putting the lines round the body in plowing.

My Ohio friend, who wanted me to go West, and not wear out my life among the stones of Western New York, is not satisfied with what I said about the matter. He admits that the averages given in the Agricultural Survey of Delaware Co., Ohio, are correct, but thinks I should have stated that "It was there inserted, that on any of our lands, by proper rotation of crops and good tillage, forty bushels of corn per acre were produced in the most unfavorable seasons, and that without underdraining, or the use of special manures, and, indeed, very little of barn-yard manure—generally, none at all." I can do as well as that here, without barn-yard manure or artificials. Plaster, clover, and thorough cultivation, will give us forty bushels of shelled corn per acre. Of course our farmers do not average this, neither do they in Ohio. But we have good farmers who raise larger crops than this, and underdraining, barn-yard manure, and artificials, are as much the exception here as in Ohio. But of course I do not claim that our land is as rich as the Scioto Valley. All I claim is, that the difference in the average crops is not so much in favor of Ohio as we generally suppose. It is very common for farmers who visit the West to tell wonderful stories on their return of the magnificent crops they have seen. And the impression here is, that the West produces double what we do—an impression which the statistics do not confirm.

The Ohio State Board of Agriculture, at its recent Annual Meeting, awarded the prize for the best crop of corn grown in the State last year to Mr. Burras, of North Fairfield, Ohio. The field contained a little over 13½ acres. It was a sandy loam, pastured the two previous seasons, and manured the previous October and November with 295 loads of barn-yard manure. Land plowed 7 to 9 inches deep the first two weeks in May, and planted May 23d. Rows four feet apart, and hills eighteen inches apart, and thinned to two stalks in a hill. On the poorest half of the field forty bushels of ashes were also applied, with a very marked effect—this half of the field giving at least one hundred bushels of corn more than the other half. Thirty dollars were expended in cultivating the field, and seventeen dollars in hoeing. The yield was less than fifty-one bushels of shelled corn per acre. Mr. B. states that the grasshoppers injured the crop considerably, especially near the fences. He thinks that five acres might have been selected that would have yielded eighty bushels of shelled corn per acre. If so, the other eight and a half acres in the field yielded less than thirty-three bushels per acre. And this is the Premium Corn Crop of the State of Ohio for the year 1868.

"In regard to the average of our wheat crop," my friend writes, "it is to be observed that a large portion, perhaps one-half the crop, is sown upon corn ground, and almost always with timothy, to which clover is added the following spring. Under these circumstances, we can afford to put up with a lighter crop than the Eastern farmer, whose land is occupied two years in the production of one crop of wheat."

Perhaps so; but the profits of a crop of corn, of 33 bushels per acre, followed by a crop of wheat, of 11 bushels per acre, and this by pasture, two acres of which is required to graze a full-grown cow or ox, cannot afford exorbitant profits. Many of our farmers here

do no better than this, some not as well. But we can raise much larger crops, and obtain far higher profits. And doubtless the same is true of Ohio. All I wished to show was, that poor farming does not produce large crops in Ohio, and that this fear of competition with the rich lands of the West is unfounded. This fact is of as much importance to the farmers of Ohio as to those of Western New York. If they can raise corn cheaper than we can, there are farmers still farther West who can raise it cheaper still. But, fortunately for us, and for the farmers of Ohio, all the advantages of life are not concentrated on one particular spot, and all the disadvantages on another. They are pretty evenly distributed. A good farmer can succeed here,—a bad one prospers nowhere.

Summer-fallowing would not be so unpopular if the work was more thoroughly done. If the land was kept constantly stirred, and no weeds suffered to grow, we should hear no more about "sun-burning," and similar nonsense. I have seen but one good summer-fallow for a dozen years or more, and that was one of John Johnston's. Naturally a rather heavy clay, three plowings, and repeated harrowings, rollings, etc., made it as clean, moist, and mellow, as a garden. No wonder it produced good wheat.

Last spring, an intelligent and wealthy young farmer of this State promised me to make the following experiments. He had a capital piece of land, from which a crop of clover for hay and for seed had been removed in 1867, and which bid fair to produce a heavy crop the next year. One of the experiments proposed was this: Plow up half the field early in the spring, before the clover starts, and summer-fallow it thoroughly, plowing it three or four times, and barrowing and cultivating as often as a weed shows itself, and oftener. The other half to be allowed to remain until the clover was in blossom, and then turn it under. The surface afterwards to be kept clean and mellow by the use of the cultivator and harrow. Both pieces to be sown to wheat the first or second week in September. Such an experiment has a bearing on a scientific question of considerable interest and practical importance. I visited my friend in July, and found a splendid flock of sheep on the "summer-fallow," with feed enough to keep them fat. Of course this was not what I wanted, and the experiment fell through. But how many summer-fallows are there that are managed much better? One of my neighbors boasts of how he kills thistles. He "summer-fallows," and in August, when the thistles are hollow, puts on a cultivator that crushes the stems of the thistles. This, he says, kills them. He "had a field completely covered with thistles, and this method destroyed them." Perhaps it might. But is this summer-fallowing? It is only truth to add that his farm is by no means free from thistles and other weeds, and is not remarkably productive.

If a farmer summer-fallows, let him do it thoroughly; otherwise he loses his time and labor, and the use of the land.

I have lately received several letters from farmers in different parts of the country, expressing surprise that I should advocate the old-fashioned, and, as they thought, "exploded" practice of fallowing, and they ask for my reasons. If I lived on a light land farm, of course I should not summer-fallow. And if I lived in a section where land was worth two hundred dollars an acre, where manures, natural or artificial, could be obtained at reasonable rates, and where

there was a good demand for everything the farm could be made to produce, I do not think I should summer-fallow. The mere loss of the use of the land for a year would be fourteen dollars an acre. I could use this fourteen dollars to better advantage in purchasing manures. But let a farmer be situated as I am, or rather say as I was five years ago, and it will pay to summer-fallow. I bought a farm of two hundred and eighty-five acres. The land, a limestone, moderately heavy loam, not too light for wheat, nor too heavy for corn; the "clay spots" which the men talked about being simply hard and cloddy from want of drainage. An underdrain and good tillage converts them into the richest and best of land. The farm thoroughly run down; not "exhausted,"—simply neglected. My crops the first season were: Weeds, uncommonly good, large, heavy, early, luxuriant, and of the best quality; Barley, late, rusted, not fit for the maltster,—when run three times through the fanning mill, and ground with corn and peas, made excellent food for pigs; screenings abundant, and fair chicken food; yield, twelve bushels per acre, "thrashers' measure;" Oats, eight or ten bushels per acre,—quality not equal to the "Poland." I also sowed peas. They were better than the oats and barley, but I forget the yield per acre. In fact, it is possible that I did not thrash them at all, but fed them out to the pigs. I keep an exact and detailed account of every day's work done on the farm, but I am now talking from memory, and may not be giving the exact figures. Sometime I may give you all the particulars.

After the barley and peas, I sowed wheat. The land was plowed, and cultivated thoroughly. The yield was about fifteen bushels per acre. It was seeded with clover, which was very good—really encouraging. After the oats, the land was plowed in the fall, I think, and again in the spring, and was planted to corn. The corn was cultivated ten or a dozen times, and was a good crop—probably seventy or seventy-five bushels of ears per acre. After this it was sown to barley: yield, perhaps eighteen bushels; the wheat, eighteen bushels. This seeded with clover, which was capital.

What I want to say is this. If, instead of sowing oats, barley, and peas, I had summer-fallowed the land, it would have been money in my pocket. A summer-fallow would have enabled me to clear the land cheaper than I could do it with a cultivator among the corn.

The error I made is a very common one—*looking at the gross receipts instead of at the profits*. I thought two crops would bring in more money than one, forgetting that even if this is the case, one good crop will often afford far more profit than two poor ones, and leave the land in better condition. If I had the last five years to live over again, I would certainly summer-fallow more. I would clear the land, develop more plant-food, and put two crops into one. It is not "high-farming," but it would pay better than sowing so much land to spring crops.

Constant Supply of Water for Live-stock.

If water has to be supplied to stock by pumping, or if the animals must be driven to the trough or brook, aside from the great expense, in time there are other losses felt keenly by the thoughtful farmer, and which we have often commented upon. Besides, the duty of watering the animals, if left to irresponsible parties, is more likely to be neglected than perhaps any

other in the whole routine of farm labors. The remedy for all this trouble is a supply by means of flowing water in the barn and stock-yard. But water is quite as desirable at the house as at the barn, and when pipes have been laid and water flows both at the barn and house, it often happens that the barn being situated on lower ground than the house, if water flows there, it will not at the higher level. To obviate any difficulty from this source, or, in case of scarcity, to economize in the use of water, Mr. J. H. Mabbett, of Tarrytown, suggests an

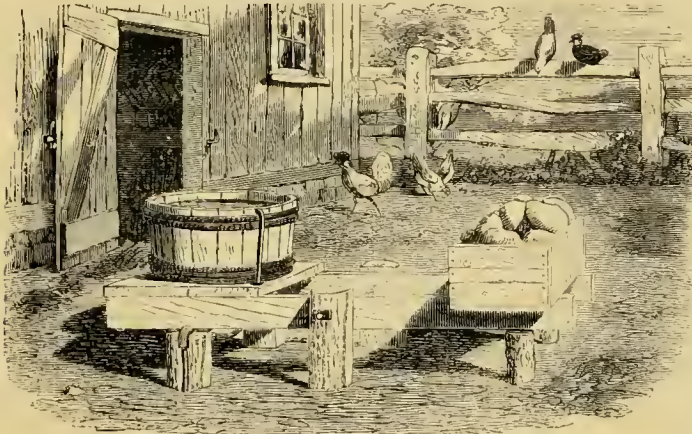


Fig. 1.—WATER FOR STOCK.

application of the principles involved in a water fountain for chickens, which he described in the *Agriculturist* of November, 1861. This is shown in figure 1. The leader, which may be a branch from, or the terminus of, the pipe that comes from the spring, or elevated cistern, comes up from the ground at the post under the tub, and a short piece of rubber tube connects it with another piece of metal pipe, which delivers the water at the top of the tub. The post is of oak or cedar, made with a sharp edge at the upper end, which receives the weight of the tub when full; over this edge the rubber connection lies. The tub is balanced upon a frame, as shown, and when nearly full, it presses

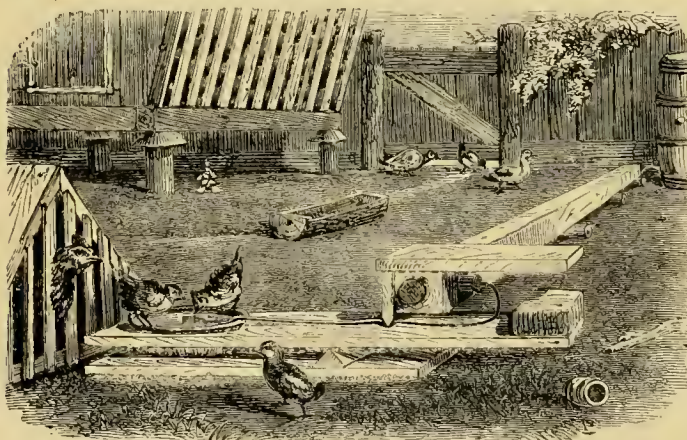


Fig. 2.—WATER FOR FOWLS.

with sufficient force upon the rubber tube to close it. Thus the tub can never remain long empty, neither can it overflow, and the water is never flowing except when there is need.

Another application of the same principle is seen in figure 2, where a wooden tube conducts the water from a barrel along near the chicken coops. Near each coop a hole is bored in the pump tube, and a cork inserted, in which is a glass or tin tube, or a bit of pipe-stem. The tube may be made to fit water-tight in the cork by melting a little wax around it with a hot iron. Over this tube or pipe-stem a thin rubber tube is drawn, which is laid upon the board,

and passing under a *squeezer*, discharges the water into a pan at one end of the board, which is counterbalanced by a brick or stone at the opposite end. Should a chick, perchance, perch upon this brick, its weight might cause the water to overflow in the pan; hence a board is nailed over it, to prevent such a catastrophe.

Saddle Horses for Farmers.

Why don't our farmers ride more on horseback? It is strange that a people descended directly from the English, whose lives may almost be said to be passed in the saddle, should have so entirely abandoned this healthful and convenient means of locomotion. It is very rare to find, on an ordinary farm, a saddle and bridle suited for better work than the plowing of corn; and to find a thoroughly good saddle, one easy for the horse and easy for the rider, is almost impossible. We cherished the hope that one of the many beneficial effects resulting from the recent

war would be to stimulate the use of saddle horses among those farmers who passed three or four years in cavalry service; but, possibly, they may have been surfeited, as, indeed, the writer was, by an overdose of a rather disagreeable kind of horsemanship, (poking along at a slow gait on rainy and wearisome marches,) and did not, as a general thing, have an opportunity of riding good horses in a pleasant way.

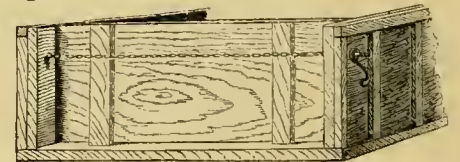
We fancy that one reason why there is not a more active general demand for really good saddle horses in America is, because every effort to obtain such an animal is pretty sure to result in disappointment. The article does not, in reality, exist in this country, except in such rare cases as not to form an important exception to the general rule. The saddle horse should be lithe, short-backed, strong-joined, long-necked, free in his action, and perfect in his temper. Such an animal is susceptible of any amount of training that an amateur rider may choose to give him; but, in the furor of trotting horses that rages throughout the whole country, where almost every point that is desirable for the saddle is disregarded, and attention is wholly given

is any class of the community who should use him regularly, and should, as a matter of pride, know how to use him thoroughly well, how to ride strongly, gracefully, and securely, it should be the robust younger farmers of the country.

In England, where it is estimated that, during the hunting season, a hundred thousand people ride daily to fox hounds, fully one-half the number being farmers, who go out to enjoy the sport or to practice their sale horses, there is, of course, a more active demand than can be expected in this country, at least for a very long time; but, even at this day, in the New York market, a perfect saddle horse, nearly thoroughbred, perfectly bitted and broken, and in all respects suited for the use of a lady or gentleman, may be readily sold for from \$2,000 to \$3,000. And when we consider the fact that the animal belongs to a race that arrives at early maturity, while his whole training may be incidental to the doing of errands and the necessary recreation of the younger members of the farmer's family, it seems to us that the opportunity for a combination of pleasure and profit should be enough to induce the giving of greater attention to the saddle-horse question.

Chain-fastening for Tail-boards.

Why is it that anybody uses rods instead of chains to fasten in the tail-boards of farm wagons? The writer has experienced the inconvenience of them from time out of mind. The engraving represents the hind end of a wagon box, with the board held in place by



TAIL-BOARD OF WAGON.

a chain, permanently attached at one end, and terminated at the other by a screw bolt, some six inches long, which goes through the side and receives a nut by which the chain is tightened up. L. M. Lane, of Fairfield County, Conn., writes: "This way of keeping the tail-board of a wagon in its place is new to me, and it may be new also to some of your readers. It certainly must be very handy if one has to take the board out often. All one has to do is to unscrew the nut, put it in his pocket, and let the chain drop. It is always in its place, and no one has to look about for it, as I have seen many farmers do for the rod." The article described was new to us, but we find it can not justly lay claim to novelty. The only objection to the chain is, that it costs 12 cents a foot, while the iron rod costs perhaps a quarter as much.

Wooden Drains.

S. M. F., of Philadelphia, writes that he has had difficulty with the choking up of a stone drain. Tiles were not to be had, and he used two strips of 1½-inch pine plank, four inches wide, set on edge, with a 7-inch plank nailed on top of them. These troughs were put into the ditch with the open side down, stone being placed on top of them, and the remainder of the ditch filled with earth. This drain has worked well. He asks in what respect such a drain is inferior to a tile drain, how long the wood will probably last, and whether the stones on top are of any use. The wood will last a long time; where water generally flows through the drain, keeping the wood saturated,

probably long enough for all practical purposes. Its inferiority to a tile drain lies chiefly in the fact that its floor is not protected against the action of the water flowing within it. There is always danger that the earth will be washed away in some places, and deposited in others, and so obstruct the drain, which is not possible when pipe tiles are used. Furthermore, the excavation required for these longer and larger troughs must be considerably more than is needed for tiles. The stones on top of the trough are of no sort of use, while, by forming courses for water outside of it, they add to the danger that loose earth may obstruct the drain.

Destroying Animal Parasites.

Lice, ticks, the scab insect, and other animal parasites, become peculiarly annoying toward spring and when the weather begins to be decidedly warm. Then their powers are more active, and they multiply with astonishing rapidity. These creatures are oviparous. Eggs are laid in suitable places, and in due time hatched. In general, the mature and the growing insects are killed without great difficulty. Soft or oily grease, certain metallic or vegetable poisons, alum water, arsenic in solution, or a decoction of tobacco, are all fatal if well applied. Mercurial ointment ("unguentum") has great efficacy, but is more liable to be fatal also to the animals themselves. Flowers of sulphur is peculiarly disagreeable to almost all parasitic life, and is especially effective in driving off or destroying hen lice. It should always be at hand, and liberally sprinkled in the nests of sitting hens. We are, however, happily relieved from the necessity and danger of using the powerful poisons above named, by the comparatively recent application of carbolic acid, in the form of soaps, to the destruction of parasites. This sub-



Fig. 1.—APPARATUS FOR INSECT WASHES.

stance is powerful even in the form of a dilute vapor, and causes discomfort and partial paralysis. The soap is constantly giving off this vapor, as we observe by the strong odor like creosote and tar. The actual contact with the soap or a solution of it is usually soon fatal. The assured fact that the eggs are not effected may account entirely for the difficulty sometimes encountered in making thorough work of some

kinds of parasites. (Lice upon dogs have given us most trouble.) Two or three applications at intervals of a week are usually sufficient to relieve the animals. In the summer, sheep and lambs are dipped, and being laid upon a draining board, the liquid is well rubbed into the skin at every part of the body. This can not be done in cool weather. The simplest convenient apparatus for applying small quantities of any such fluid to the skin of any animal is, probably, an oiling flask, a kump filler, or a common bottle, with a perforated cork, in which is a quill, or a small glass or tin tube, but little longer than the cork. From this the fluid may be squirted by a slight jerk, and directed to the exact spot where it is wanted. A good deal more of a flow is secured by cutting a notch in the cork, but it is much better to make two holes through the cork, and to place in one a short tube, as before, and in the other a long one, to admit air, reaching nearly to the bottom of the bottle, and having the outer end bent, as shown at *a*, fig. 1, which represents a glass tube, or at *b*, which represents a tin one. Glass tubes as large as a pipe-stem, and having pretty thick walls, are easily bent if heated over the chimney of a common kerosene lamp. Holes in corks are made with rat-tail files, and if the tubes do not fit air-tight, a little beeswax melted over the top of the cork will make them. From a bottle thus arranged, the fluid will run in a steady stream, as strongly or gently as the operator chooses, according as the bottle is more or less inclined. A still more handy apparatus is also shown in figure 1. A pail containing the liquid is suspended at any convenient height; from it hangs a rubber tube of sufficient length to conduct the liquid to every part of the animal, which is placed upon a table, or made to stand beneath. The tube reaches from the bottom of the pail, passes over the side, where it is tied to prevent its slipping out, and perhaps favored by being laid upon a little saddle of tin or leather, so that the sharp bend shall not close it. Thus a siphon is formed, which will discharge a constant stream of the fluid, unless stopped. A little faucet may be placed in the discharging end, or the tube may be simply closed by the pressure of the thumb and finger, and this end hung by a string or wire upon the edge of the pail when not in use. The best plan, however, is to insert a bit of glass or tin tube in the end, and just back of it to place a "pinch faucet," if we may so call the little contrivance called *quetch-hahn* by the Germans. This is shown in fig. 2, and is a piece of brass wire, bent, and hammered flat, which makes it a stiff spring. This faucet is opened by pressing with the fingers on the coiled ends, and may be held open by slipping it over the end of the nozzle.

If the solution of Carbolic Soap is used, it may be made quite strong, following the directions given upon the packages, as usually sold.

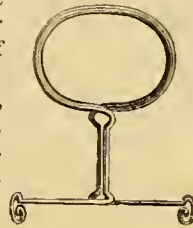
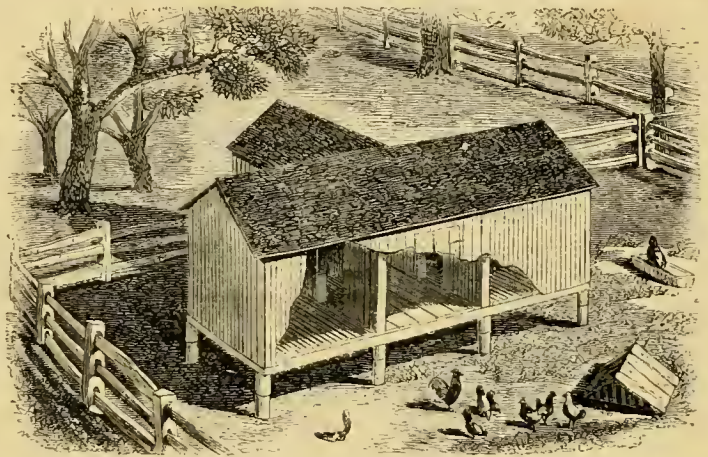


Fig. 2.

The wool or hair should be parted, and the soap water made to touch the skin at every point. It is best to take both time and pains to rub it thoroughly in. It is not necessary or best to wash it out, but it should remain, in order to produce its full effects.

Corn-Cribs and Granaries.

We are glad to get a really new idea on the subject of corn-cribs. The way of bracing a twenty-four-foot corn-crib so that it shall be in no danger of blowing over in a gale, by a wing at right angles to it, and attached to the centre of one side, is to us quite new. It is communicated to the *Agriculturist* by Mr. P. Davis, of Newport News, Va., who describes his corn-house as consisting of four rooms, each eight feet square, the middle or front one having a closely-boarded front and floor, the others having both front and sides of open-work. Mr. Davis says, "No one but myself believed that it would save the corn, because there was so much



P. DAVIS'S CORN-CRIB.

of it bulked together." The result, however, has proved eminently satisfactory. He adds, in regard to the details, "I make the floor of narrow boards, placed three-quarters of an inch apart, and the sides of narrow strips, half an inch apart, thus giving plenty of ventilation. Corn may be husked as soon as it is safe to pull it from the stalk, and stored in such a crib in as large a bulk as one has room for, and it will not injure in the least. The open floor is what keeps it from heating. There is no need of making a corn-crib narrow at the bottom, for rain will not beat in on a perpendicular side, to do any harm, if the floor is an open one. The middle or front room should have a tight floor and front, as this is the place to shell the corn, keep seeds, etc. The sills should be three and a half feet from the ground, laid upon solid posts, set at least three feet in the ground. Sheets of tin nailed around the posts at the upper end are better than inverted pans or flat stones, as such things upon the top of the posts are liable to be injured, are not easily repaired, and are in the way. The tin should reach all round the post, and extend down ten inches from the top. Tenons in the tops of the posts should be made to enter mortises in the sills. There are two especial benefits in a crib such as I describe: First, the building has a broad foundation, without being a very large one, and is not liable to be turned over by the wind, as is often the case with the long, narrow (and narrower bottomed) ones we often see. Second, the door is in the middle, making it convenient to fill all the three store-rooms without either

carrying the grain far, or running over much corn. There is no use of more ventilation over the top than the three gable ends afford. The sides of the crib should be well girded, and the strips strongly nailed to them, so that the weight and pressure of the corn cannot open them. The floor must also be strong. There should be ten posts under the crib. I think ten by ten feet square the best size for each of the rooms, and that will make room for a good crop, and will hold all of a small one, and leave room to pack away anything that you wish to keep away from rats and mice."

Three-horse Evener.

There are thousands of intelligent farmers in this country who never saw three horses worked abreast. It is a rare sight in New England, and



THREE-HORSE EVENER.

in a great part of New York and New Jersey. The great gain in power leads us to present the subject frequently. In addition to the forms for evener and whiffletrees previously given, Mr. S. B. Fisher, of Westmoreland Co., Pa., sends us a drawing and description of a form he has used several years. It is more complicated than the common simple evener in two pieces, but has decided advantages. Mr. Fisher writes:

"The large or main beam is four feet ten inches long, the two outside beams are two feet three inches, and the center beam one foot six inches. The clevises in the outside beams are placed nine inches and a half from the large end of each, the holes being in the center, and the clevises riveted fast. The small ends of the outside beams and the ends of the center beam are ferruled, and small gudgeons with eyes in them are driven into them, and connected by a ring. This, if made right, is the most complete three-horse double-tree."

Good Cows for Poor Men.

Every poor man who can afford to do so naturally keeps a cow; but he generally makes the mistake of keeping a cheap cow, that is, a cow of poor quality. Spending from \$40 to \$60 for her purchase, he secures an animal that, on not very abundant food, but still kept at some expense, supplies the family with enough milk for their use. He considers the operation a profitable one, and undoubtedly it is so. Many poor men would be inclined, we fancy, to think us wild in advising them to pay so much as even \$100 or \$125 for an extra good cow, the best that can be found in the neighborhood; yet we are confident that in a majority of cases, due care being given to the animal's health, cleanliness, and ample nutrition, the profit would be very much greater than with an inferior animal. Probably the average of cows kept for the family use of poor men will not give more than 1,500 quarts of milk per annum, or, at the most, 1,800 quarts. This amount of milk, in the family of the ordinary mechanic or laborer, is worth five cents a quart for home consumption,—say \$75 or \$80 a year. Out of this sum is to be paid the interest of the animal's cost, her depreciation in value, and the price of purchased food, which is more or less according to the circumstances under which the family live.

For \$125, even in other districts than those which are chiefly devoted to the keeping of cows, an excellent animal, frequently a grade Ayrshire or Short-horn, may be purchased, that will give with good care, on rich food, not less than 4,000 quarts of milk per annum. Instances are not rare of the yield reaching even 5,000 quarts. With such an animal we will suppose that, as in the previous case, 1,500 quarts are consumed by the family, and are estimated to be worth \$75. This leaves 2,500 quarts of milk for sale; and, in almost every village in the land, this milk may be readily sold at the door for six or eight, and not seldom for ten cents a quart. At the least price,—six cents,—the total amount of sales would be \$150, which would pay for the extra food required to keep this larger animal in the best condition, and for the increased interest and depreciation, and leave a handsome profit besides. Any cow must be sheltered, fed, milked, and generally attended to. The amount of labor required in the case of the better animal is in no respect

greater than in the case of the poorer one. The profit of the operation is all real profit, and no small account should be made of the greater satisfaction and pleasure that result from full milk-pails than from those half full, from fine cows than from "scrubs." It is a return to that old principle that whatever is worth doing at all is worth doing well; and if it will pay to keep any cow at all it will surely pay to keep the best cow that we can afford to buy.

Experience with Fancy Pigs.

About a year ago we purchased a pair of pigs, descended from the stock of the Earl of Sefton, in England, for which we paid in their early infancy, \$60, calculating, with an utter disregard of the old story of the milkmaid in our spelling-book, that if the sow would give two litters a year it would be reasonable to hope for eight pairs of pigs, which, sold at \$60 a pair, would produce a gross income of \$480. Of course, \$80 would be ample for feed and care, and the very handsome profit of \$400 a year would make the investment of \$60 a most brilliant one.

And now for the result! After a year of most careful and somewhat expensive treatment, during which the animals purchased have grown to fair, but not to astonishing proportions, there has at last been produced a litter of five pigs, four fine ones and one "runt." Whether owing to the high mettle of the mother or to her natural viciousness, whether to predetermined infanticide or to accident, we are unable to say; but this promising family has been reduced, one by one, until now the sum total of the progeny available for future operations is one pig! While it might still be possible to sell to a credulous person a pair of these pigs for \$60, we have found it impossible to get an offer of \$30 for half a pair. Having invested in this enterprise, we propose to see it through, but our hope of magnificent results is slightly dimmed, and our plan of future operations will probably confine itself to such tactics as will get back for the whole concern, young and old, a gross sum of \$60, charging the cost of a year's keep and of baffled hopes to the account of experience. This, however, does not prove that the Sefton pigs are not excellent, and probably they are. There is no doubt that much of our misfortune is the result of too long continued in-breeding in the herd from

which the purchase was made. But the moral of the tale plainly points to the recommendation, not to invest large amounts of money in untried breeds of fancy animals, with a confident hope of making a good deal of money by the operation.

Thoroughbred Males.

It is not within the means of the very large majority of farmers in this country or in any other, to raise only, or chiefly, expensive thoroughbred stock. But it is within the power of every one of them, or it soon would be if they cared for it, to breed only from thoroughbred males. These, belonging to a fixed type or race, perpetuate their peculiarities with much greater certainty than do mongrel bred animals, and they will almost always overcome, in a great degree, the defects of mongrel females, thus constantly elevating the grade of the animal towards the type of the purer race.

This rule holds good with reference to every variety of farm stock, from horses to poultry.

Sir John Fenwick, in the reign of Charles II., said that "every blood horse, even if he be the meanest hack that ever came out of Barbary, is so infinitely superior in courage, stoutness and quality, both of bone and sinew, as well as blood, to the best cold-blooded mare that ever went on a shodden hoof, that he cannot fail to improve the stock, whatever may be his comparative standing among racers." And Sir John Fenwick was perfectly right, as the history, not only of running horses but of trotters, has amply proven; for there is not to-day a successful trotting horse in America who has not in his veins a very large proportion of thorough blood, derived probably through several generations from the side of the sire.

Cattle for the shambles are more economically fed and more rapidly raised to a larger size, if they have been sired by a thoroughbred Short-horn. Cows for the dairy are better and more profitable in proportion to the number of thoroughbred sires whose blood they carry. The commonest and coarsest sow will give far more easily kept and advantageously sold pigs, if these are sired by a thoroughbred Essex, Sefton, or other boar of fixed type. That the same rule holds good in the poultry-yard no breeder need be told. And throughout the whole range, the cost of securing the services of thoroughbred males is as nothing compared with the value of the result as shown in the progeny.

The Poultry-house at Ogden Farm.

As there is an immense demand among the summer visitors at Newport for early spring chickens—these sometimes selling in June for \$2.50 a pair—it has been attempted at Ogden Farm to perfect an arrangement by which early laying and early brooding may be secured. For this purpose, the poultry-house has been built on the south side of a five-foot stone wall. The width of the house at the top is 8 feet, and at the bottom, 10 feet. The plate at the eaves of the roof lies directly upon the wall, while its front edge is 3 feet higher, or 8 feet from the ground. The front is built with a batter, or slope, of two feet, and the whole front, for six feet down from the roof, is made of glass, there being six sashes, 4 feet wide and 6 feet long, having only longitudinal bars, between which the glass is set, as it is in ordinary green-house sashes. A row of "secret" nests runs the whole length of the house, immediately under

the windows, the sun falling directly upon the board covering of these nests, and adding somewhat to their warmth. The stone wall has been pointed with a cement and lime mortar, both on the inside of the house and on its north side, a little beyond the end of the house, each way. The roof and ends are covered with shingles, a board sheeting being nailed to joists, on the inside of which, lathes, set at intervals of six or eight inches, support a layer of sea-weed, which occupies a space equal to the thickness of the joists. The bottom of the house is banked all around with sea-weed or manure, and it would be difficult to conceive of a warmer and sunnier shelter than the whole arrangement affords. The perches, which are four in number, run lengthwise of the house, standing on the same level, about two feet above the ground. They are simply laid in sockets, and can be removed at any time for cleansing, and for the spading up or raking of the soft earth below, with which it is proposed to mix the droppings once or twice a week. The posts between the sashes support, on their inner side, a light, galvanized, iron netting, which covers the whole opening, serving to keep the fowls from flying against the glass, and for keeping them inside the house in summer, when the sashes are entirely removed. The whole cost of the house, built in the best manner, has been less than \$75, and it is large enough to accommodate fifty laying hens, and their early spring progeny. It is impossible yet to speak of the results of this experiment, but, as it involves no new principle, and depends only upon the perfection of methods which have already been tried, there is no reason for supposing that its success will not be complete. Certainly it will not add to the farm expenses in the items of interest, insurance, and wear and tear, more than \$7.50 per annum, equal to fifteen dozen eggs at the average February prices.

Milk Cooling and Coolers.

This is an important subject. The number of devices for effecting this object which will soon be pressed upon the farming community will, we presume, be equaled only by that of wringers and washing machines. Already many patents have been granted, some of which we know to be excellent, and the owners of these patents have the use of our advertising columns, in which to make known their merits.

The following description of a cooler, which is not patented, is sent us by a correspondent, W. C., of Oberlin, O., who has had it in use. We have no doubt it will cool milk quite rapidly, in the broad-mouthed cans such as are used in the dairy regions for carrying milk to the factories. It may be made by any tinsmith, and is not liable to be injured in use. Mr. C. writes: "For cooling milk in Carrying Cans holding thirty to forty gallons, take two tin tubes eight inches in diameter and twenty inches long, each with covers to fit; connect them at top by means of a round, or half round, bowed tin handle, an inch and a quarter in diameter, four inches long, and at bottom by a strap of double tin of the same width. For using, fill the cooler with ice and water to within two or three inches of the top, and set it in the milk-can. After putting two or three pails of milk into the can, lift the cooler a little, and turn it half round and back two or three times; this will stir the milk and equalize



MILK COOLER.

the temperature. Repeat this after the addition of each successive pail of milk, until the can is full enough. If the milk be not quite as cool as desired, the process may be continued until the desired result is attained, which will not be long. In this way we can prepare milk for raising cream, or for carrying to the factory or to market. It may be kept in good condition twenty-four hours, and then give better satisfaction to the cheese-maker and consumer, than if transported warm, immediately after being drawn from the cow. This simple mode of cooling milk gives entire satisfaction to all who have tried it."

WHITE CLOVER.—In seeding down land intended for pasture it is a great mistake not to sow a pound or two of white clover with the red clover and timothy. It will add greatly to the growth and value of the pasture.

What Lands Shall We Drain?

In the January number, in an article on Draining, several questions were set apart for future discussion. The first of these was the one which forms the title of this article.

The question immediately rises, when a farmer thinks of draining, Which of my fields shall I drain first? and he generally answers it by selecting the worst. In fact, writers on the subject of draining almost always recommend that it be first applied to such fields as are most in need of it, that is, to utterly worthless swamps and very wet brush pastures. Though, at first sight, the advice seems to be good, on farther consideration, it will be seen that there are some good reasons why these fields are not the ones whose early draining will result in the greatest early profit. The draining of a worthless swamp is an acquisition of more land, an extension of the actual limits of the farm; and it implies a greater amount of work to be done in cultivation and harvesting, more capital to be invested in implements and labor, and additional acres to be manured. The crop resulting from its reclamation must pay the charges of interest, labor, live-stock, and manure, before it can yield us any actual profit; and probably during the first ten years after the reclaiming of such land, when we come to consider the extent to which other land must be neglected for the sake of it, there will not be much clear profit resulting.

Probably the land which it will pay the farmer best to drain is the best land on his whole farm, if this needs draining at all. Interest on value, teams, and labor for cultivation, manure for fertilizing, and stock to consume products, are already provided; the field is already paying all these charges. Any process that will tend to increase its crop will be attended with very slight increase of expense, if any; and the entire benefit attributable to the drainage is so much clear profit, which, taxed by no charges, accumulates year by year into a fund which will enable us to extend our improvements to other lands. In the draining of the farm, we shall come finally to the worthless swamp, armed with experience in the work, confidence in its results, and means for its execution which will insure not only that the draining shall be complete and successful, but that the improved condition of the land shall immediately be made to yield its fair proportion of profit.

Of course, there are many fields and many whole farms which need nothing more than the very complete draining that Nature herself has given them in the form of a porous subsoil—such lands as are known all over the country as

"early" and "warm." A few years ago we contemplated the conversion of a field of heavy land into a market garden, and on consultation with an old-fashioned neighbor were dissuaded from doing so. "I don't think that'll make good garden land." "Why not?" "Well, it's kind o' cold and late." "But I intend to underdrain it." "Well, I know—but it's cold." "Is n't it cold because it's wet?" "Well, may be so, partly—but then it's naterally cold."

Now, if the experience of the last forty or fifty years in the use of draining tiles has proven anything, it has proven that "naterally cold" means wet, and means absolutely nothing else. In proportion as heavy, wet lands are thoroughly drained, in just that proportion do they become thoroughly warm; and while, owing to the quantity of clay they contain, it may not be possible ever to make them as light and warm as sandy land, it is always possible to make them light enough and warm enough for the most successful cultivation. If we desired to sum up in a single expression the whole gist of our advice to any farmer who wished to decide what fields it was best for him to drain, we should recommend him to try, first of all, such as are "naterally cold;" and if we wished to be more explicit, we should carry out the arguments which justify this suggestion by endeavoring to convince him that his greatest proportion, not of *return*, but of *profit*, is to be found in the draining of land which is already rich and profitable for cultivation, but is yearly subject to those many ill effects of too great wet or too great drought, which it is the chief object of underdraining to overcome.

The Pea-nut, or Ground-pea.

To judge from the number of letters inquiring about the culture of the Pea-nut, Ground-pea, or Pindar, there is considerable interest felt in this crop. The plant being a tropical one, it can be successfully grown only in the warmer States. Small quantities have been raised in New Jersey and Southern Illinois, but the main supply comes from further south. The best account of its culture that we have seen is one given some time ago in the Southern Cultivator, by Mr. N. M. Nixon, of North Carolina, a pea-nut grower of over fifty years' experience. We condense from Mr. N's rather extended article the essential points. The best soil is a light sandy loam; this is manured with 30 to 60 bushels of shell lime to the acre, and 80 to 100 loads of rotted leaves, or woods' mould; ashes are considered valuable. Coarse vegetable matter, or "trash," is burned off, the land thoroughly mellowed by plowing, and the surface made as level as possible. Rows are laid off with a plow or marker, from 27 to 32 inches apart each way, according to the quality of the land. At the intersections of the markings, two peas that have been carefully shelled are dropped, and covered from 2 to 3 inches deep with a hoe, using fine earth. Planting is done from the middle of April to the middle of May. Thorough cultivation is required, which may be done with the plow or horse-hoe, assisted by hand-hoeing, and hand-pulling such weeds as cannot be otherwise reached. The crop must not be allowed to get foul. Harvesting is done in October, and before any frost touches the vines. In harvesting, a plow arranged for the purpose is run along each side of the row; this loosens the vines, which are then pulled up, shaken, and placed upside down. They remain in this position to cure, which requires from two



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HERONS AND THEIR NESTS.—FROM A PICTURE BY WOLF.—Drawn and Engraved for the American Agriculturist.

to six days. The vines, with the peas attached, are then folded in bunches, and stacked, the stack being capped with straw. After remaining in the stack for ten or fifteen days, they are removed to houses, which are tight sheds, thirty feet wide, sixteen to eighteen feet high, and sixty or seventy feet long. A ten-foot passage runs the length of the house; through this the wagon passes, and the vines are stacked on each side, and afterwards the passage itself is filled with vines. The peas are thrashed by a steam or horse-power machine, which has been invented for the purpose. The vines are considered equal in value to clover hay for oxen and mules, but are usually too sandy for horses. The yield varies from thirty to fifty bushels to the acre. Pea-nuts are very exhausting to the soil, and Mr. N. crops his land with them only once in three years; the next year he takes a crop of rye, and the third the land lies fallow.

A Heronry.

Our country abounds in varieties of herons, and they are so peculiar in their form and coloring, and so noticeable for their size, that they have an interest to almost every one. They are a race of fishers, living chiefly upon such fishes and other aquatic animals as frequent the shallow waters of ponds and brooks, though they are as fond of the young of other birds and of small quadrupeds, as frogs, mice, and shrews, as crows are of eggs. Herons, therefore, however interesting, are likely to do great damage in fish-ponds and trout-brooks, for they are ravenous feeders, and require an immense amount of food. Some varieties are shy and seldom approach the abodes of men, preferring, rather, almost inaccessible swamps or other quiet retreats. Other kinds, like the Night Heron and the Green Heron, or "Poke," are familiar birds, and will follow up

a trout-brook to our very barn-yards, and frequently visit the gold-fish ponds in gentlemen's lawns. The Heron family includes Waders, which have long, sharp, compressed, pointed bills, the edges of which are usually notched at the ends. They have a remarkable looseness and length of certain feathers, particularly those of the crest, neck, and back. They pass under the common names of Cranes, Herons, and Bitterns, although all that are called Cranes do not properly belong to the Heron family. Most of the species of Herons build their nests in communities, or, rather, perhaps we may say, they are not solitary from preference, but appear to enjoy life in what might be termed villages and large towns. And so there exist what are called Heronries, or places frequented by great numbers of herons during the breeding season. Heronries are usually in the midst of swamps or similar isolated places, as is represented in the above engraving.

The Persian Cyclamen. (*Cyclamen Persicum*.)

BY WM. J. DAVIDSON, FLATBUSH, N. Y.

Of the many winter and spring-blooming plants that we cultivate for green-house or home decoration, there are few more interesting or useful than the Cyclamen. Its remarkably neat habit of growth, and elegantly marbled or netted foliage, combined with the beautiful and rather odd-looking flowers, render it peculiarly attractive, while its delightful fragrance and easy management give it additional claims to our attention. Many have imagined that it requires some years to get blooming plants from seed, and have thus been deterred from attempting their management; indeed, I was recently asked by a florist of many years' standing, if our plants were three or four years from seed; when, in fact, it is little over a year since the seed was sown. We sow the seed in November, and as soon as the young plants are fit to handle, transplant them about an inch apart into boxes until spring, when they are potted into small pots singly, in rather open, loamy soil, a liberal addition of well-rotted manure and sand being used. By the first of June they are ready for larger pots, and are then placed in a frame and shaded during the day, by the glass being whitewashed, the sash being taken off at night to give them all the benefit of the cooling dews. They do not grow much during the hot weather, but as soon as the nights begin to lengthen and grow cooler the plants get fresh vigor, and by the end of September they are ready to be placed in the pots in which they are to flower. After potting, they are placed in a cool, airy house, and receive all the air that can safely be given to them during the winter months. With the beginning of November the earliest and strongest begin to bloom; others follow in rapid succession, and as

do not all open at once, the flowers are so remarkably persistent that the plants often remain in full beauty for over four months. As the warm months advance the plants will show signs of exhaustion, and the flower-stalks begin to coil themselves up in a spiral form having the seed-pod in the center, and bending towards,

THE PERSIAN CYCLAMEN.—(*Cyclamen Persicum*.)

often into, the earth, ripen their seeds for another season. Probably the best method of treating the old plants is to plunge the pots in a shady border out of doors during summer, and about September, as soon as they begin to make new leaves, take them up, and shaking away the greater part of the old soil, repot them, and treat them as recommended above. I would add that there are few better plants for parlor decoration than the Persian Cyclamen. It is especially a window plant, and if kept cool, say at a night temperature of 40°, and the leaves washed once a week, it will grow and flourish almost as well as in a green-house, standing the variations of temperature and dryness of atmosphere as well as the pet Hyacinth or Chinese Primrose. [The engraving given above is from a specimen from Mr. Davidson's collection, and is about half the natural size.—Eds.]

The Alpine Rock-Cress. — (*Arabis alpina*.)

A good horticultural friend sent us a bit of the Alpine Rock-Cress, and to accommodate its mountain habit, it was placed upon the top of a rock-work at least four feet high. Either because of this great elevation, or because it found a "pocket" of congenial soil, it flourished finely. Whenever the snow melts off during the winter, there are its green leaves, looking as brave as if in defiance of winter. At the first suggestion of spring, buds appear, and before the rest of the hardy plants have fairly waked up, this completely covers itself with a sheet of pure white flowers, and remains a long time in bloom. The flower stems are about six inches high—in rich borders, somewhat taller,—and the flowers and leaves about twice the size shown in the engraving. It is a great comfort to have plants that take care of themselves, and need neither potting nor shelter. Please do not

write to us for some of our stock, as many do for almost every plant we mention; every available bit is promised already. The seedsmen keep the seeds. Sow them this spring, take care of the plants through the summer, and in autumn set the plants where they are to flower. A stock, once obtained, multiplies itself readily by short prostrate branches or offsets which root freely, and a single plant will soon make a dense mat of foliage.

Our Native Sumachs.

The Sumachs belong to the genus *Rhus*, which is the ancient name for the genus. One from the south of Europe, *Rhus Cotinus*, is well known in cultivation as the Smoke-tree, or Venetian Sumach, and is often improperly called the Fringe-tree and Purple Fringe. It is conspicuous for its large masses of hairy flower-stalks. This species has simple leaves, while all our natives have compound ones. Leaving out of consideration for the present our two poisonous species, the Poison Sumach or Dogwood, and the Poison Ivy, which are both distinguished from the rest by their smooth, white, or dun-colored fruit, we notice three which are striking in the landscape for the tropical aspect of their foliage, as well as for their large clusters of crimson berries. The most common species is the Smooth Sumach (*R. glabra*), which is very abundant on poor soils, and often overruns neglected fields. It is usually about four feet

high, but sometimes attains ten or twelve feet. The leaves are a foot or more long, with eleven to thirty-one divisions. In December, 1866, we figured a remarkable cut-leaved variety of this. The flowers are borne in a large cluster at the ends of the branches, are small, greenish white, or yellowish, and not showy; but the resulting fruit, or berry, as it is popularly called, is of a brilliant crimson, hairy, and very acid to the

ALPINE ROCK-CRESS.—(*Arabis alpina*.)

the days begin to lengthen, they are a blaze of beauty, their many shades of color and delightful fragrance calling forth the admiration of every one. Each plant ought now to have from 12 to 30 flowers expanded, for though they

SMOOTH SUMACH.—(*Rhus glabra*.)

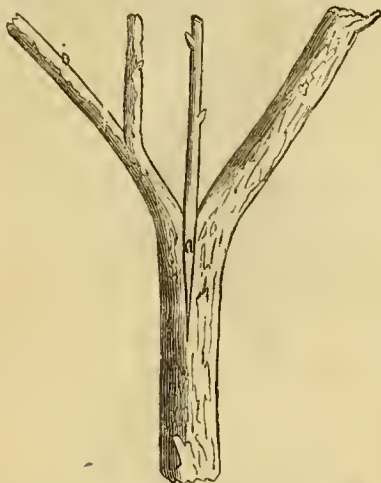
taste. The plant itself is smooth throughout. The Staghorn Sumach (*R. typhina*), is the largest of our species, often reaching the height of twenty or thirty feet, and with irregular and straggling branches. The ends of the branches

are covered with a thick down, and resemble the horns of a stag when in "the velvet,"—a peculiarity which gives the popular name. The leaves are of a lighter green than in the first mentioned species. The Dwarf or Mountain Sumach (*R. copallina*), is the handsomest of our native species, and rather less common than the other two. It is from one foot to six feet high, and while it has the same general appearance as the others, it is readily distinguished by its darker green and shining leaves, the stalk of which, or petiole, is winged or margined, so as to appear jointed. All three species add much to the beauty of our autumn scenery, their leaves giving us the most brilliant colors; those of the first two turn to yellow, scarlet, and crimson, and in the Dwarf Sumach they become a beautiful purple, while the crimson or purple heads of fruit make up a mass of color that few shrubs can equal. They are all easily propagated by cuttings of the root, and it is this facility with which they are multiplied that renders them in a great measure unsuitable for introduction into well-kept grounds. Still there are many sandy and barren places where nothing else will grow, which the Sumach would make green in summer, and aglow with the most brilliant hues in autumn. A species of the south of Europe (*R. coriaria*), furnishes in its leaves a valuable material for dyeing and tanning. The species we have named possess similar properties, though in a somewhat less degree. Analysis shows their relative value to be as 26 to 20. The leaves are collected when fully grown and before they begin to turn, usually in August. The leafy tops of the shrubs are cut off or the long leaves beaten off by means of sticks, and carefully dried. Where there is a demand from manufacturing establishments in the neighborhood, the leaves undergo no preparation, but to make them an article of commerce, they must be ground and bolted.

A New Method of Grafting Fruit Trees.

BY M. JEAN SISLEY, LYONS, FRANCE.

The readers of horticultural publications are aware that Mr. A. Boisselot, of Nantes, (France), is the inventor of a very useful method of grafting the vine, which is to insert the graft in the fork between two branches, as shown by the engraving. The advantage of this mode of grafting the vine has been generally recognized,



BOISSELOT'S GRAFT.

but no one has before thought of applying it to other trees, and A. Boisselot himself was not aware of the great service he rendered to horticulture when he published his invention. I have applied it to a great variety of trees, but

principally to the pear, to experiment with new varieties of pears which I receive in great number every year. Before I knew Boisselot's system I could not make use of a great number of the grafts I received, not being willing to sacrifice the trees that were yielding me yearly a quantity of fruit; the old system of cleft-grafting necessitating the mutilation of the whole tree, or at least its principal branches. During the last two years I have grafted every variety of pears I have received, (and at any time of the year), according to the Boisselot system. The grafts have grown like the other branches of the trees, and some of them bore fruit last year. I can thus keep my old trees until I find that the new sorts are preferable to the old ones, and most likely I shall not be obliged to cut them down, as several sorts of pears can very well live and prosper together on the same tree. I have thus increased my enjoyment. This method is, of course, not very practicable on large trees, but is principally useful for small gardens where espaliers and dwarfs are grown, to take up less space. By this method, with a limited number of trees, a great many varieties of fruit can be grown. It can also be usefully employed for experimenting with seedlings that show signs of excellence. It must be understood that no part of the branches between which the grafts are inserted is to be cut back; therefore no mutilation of any part of the old trees is necessary, as is the case in cleft-grafting. [The engraving shows the graft as inserted; it is to be tied, and the junction covered with grafting-wax, or waxed cloth, in the usual manner.—EDS.]

Experience with Vegetables.

BY J. ROBE, MT. LEBANON, N. Y.

BEANS.—The Fejee, or White's Early Bush Bean, is remarkably early as a shelled bean, and almost as good as the pole cranberry; but these dark-colored beans do not find so much favor as the white kinds. Some of the Fejees are nearly white, and I have been trying to run out the dark color by selecting, and planting only the whitest, but have not yet succeeded.

BEETS.—The Spinach Beet, I procured from Washburn & Co., Boston, is an excellent substitute for Spinach, being superior in flavor to it. It may be cut several times during the season. The roots, if slightly covered, will live through the winter, and make early greens, but if covered too much, they will be smothered. . . . The Imperial White Sugar Beet is, perhaps, the sweetest of beets. . . . For early beets to be eaten while small, the Scarcity or Mangel is the earliest and best, but when older, it becomes coarse, and is only fit for cattle. . . . The Bassano is not only very early, but for raciness of flavor is the *ne plus ultra* of beets, for, though we have tried Simon's Early, the Pineapple, the St. Osyth, etc., we have as yet found nothing to equal it.

CUCUMBERS.—The West India Gherkin makes a very good soup or stew, and is easily raised: sow at the same time as the common cucumber, about twenty seeds in a hill, for the black flies are very fond of them. Thin out, so as to leave, finally, but one or two plants in each hill.

OKRA.—This is an excellent vegetable, and should be more extensively cultivated. As with the tomato, the taste for it must be cultivated, and then no vegetable is nicer. The pods are eaten not only in soups, but cooked like asparagus. In our latitude, it needs a hot-bed to start it.

PEAS.—Sowed April 18th, without brushing, in triple rows, one foot apart, about one pint to

one hundred feet, the four following kinds: McLean's Little Gem, Advancer, Eugenie, and Champion of England. Time of blooming: Eugenie, June 6th; Gem, the 8th; Advancer, the 12th; and Champion, the 15th. Pods ready for picking: Gem, 23d June; Advancer, the 27th; Eugenie, July 4th; and the Champion, July 8th. From blossoming to full pods: Advancer and Gem, fifteen, Champion, twenty-three, and Eugenie, twenty-eight days. They are all excellent varieties of peas, but the Eugenie did not fill its pods well, although it is a great bearer.

POTATOES.—The Sebec, with us, yields poorly, and rots badly. . . . The Goodrich is productive and good. . . . The Gamet Chili is good, and does not rot; and although not called early, yet we can dig large ones sooner than from the Sebec or Goodrich. . . . The Harison, with us, is very productive, but also very poor and soggy; though a friend of ours, three miles off, got some of our Harisons, and from that stock raised splendid mealy potatoes. The Early Handsworth turns out early, small, very few, and very poor.

SCOLYMUS.—Is cooked like Vegetable Oyster, but is, I think, preferable, the roots growing much larger. [Called Spanish Oyster Plant.—EDS.]

TOMATOES.—The following kinds were sown in the house in boxes Feb. 27th; transplanted into hot-beds April 3d, and set out in open ground May 25th: about 300 Tilden, 300 Cedar Hill, and 80 each of Smooth Red, Early York, Keyes, and Orangefield. The first ripe were: Tilden, July 28th; Cedar Hill and Orangefield, August 7th; Keyes, August 12th; York and Smooth Red, August 15th. Crop to August 23d: Cedar Hill, forty-four bushels, or one bushel to seven plants; Tilden, twenty-five bushels, or one bushel to twelve plants; York, five bushels, or one bushel to sixteen plants; Keyes, four bushels, or one bushel to twenty plants; Smooth Red, two and a half bushels, or one bushel to thirty-two plants. So that, although the Tilden was ten days ahead of the Cedar Hill, yet by August 23d, we had picked forty-four Cedar Hill to twenty-five Tilden. At the end of the season, the Cedar Hill averaged one bushel to three and a half plants; the Tilden, one to four plants. One hundred Tildens were nipped in, and three hundred not nipped; when the first began to ripen, we picked thirty tomatoes from the one hundred nipped, and had to go over the three hundred to get the same number. . . . The Orangefield is almost as good as a plum for eating raw; it is the sweetest tomato I have tasted. I think that by selection of the sweetest, the tomato will finally rank as a table fruit.

Fruit at Alton, Ill.—Peaches, Apples, and Plums.—BY O. L. BARLER.

[Alton, Ill., has become one of our important pomological centres. Its fruit-growers and others are united in a Horticultural Society, which is a wide-awake body, and is doing a good work. We have arranged with Mr. Barler to keep our readers informed as to the horticultural doings in and about Alton.—EDS.]

On the night of the 10th of December, the mercury sank to 14° below zero, and killed every peach bud in all this region, so far as we have examined, or heard from. Never, in the knowledge of the "oldest inhabitant," have the buds been more thoroughly killed, whereupon some have been thinking that it would be a "heavy joke upon the euroelio." Dr. Hull predicts that, finding no peaches, the "little Turk" will turn upon and destroy our apple crop.

Dr. H. gives in substance the following sad picture: Until within a few years, the apple was grown almost without care. Of late, however, so numerous are its diseases and insect enemies, that in some districts its culture is no longer attended with success, and unless we combine our efforts against its insect enemies, we must wholly abandon its culture, or be contented to feast on the few wormy and knotty specimens which reach maturity. So rapid has been the increase of the plum curculio and the apple curculio, that in some districts these two insects, or even the plum curculio alone, are in sufficient force to totally ruin the apple crop. Hereafter, so far as we can now see, no escape from the ravages of these insects need be looked for, except by united effort in their destruction.

So numerous have curculios become in our own grounds and the surroundings, that for the past two years, our Janet apples have been destroyed, and other varieties made worthless, except for cider. In future, we shall have to bestow the same care in catching curculios on our apple trees that we do on our plum trees. Except in very early apples, the larvæ of the plum curculio do not perfect themselves, but the parts wounded by them furnish resting-places for fungi, which multiply and spread to all parts of the orchard. Horticulturists must recognize the fact that, as we increase the production of any fruit, we, at the same time, increase its peculiar insects and diseases. In the opinion of the Doctor, some varieties of plums may be grown to a profit in all parts of the State, and in many parts with far less care than will hereafter have to be bestowed on the apple. In this country, the curculio has so long held undisputed dominion over the plum, that a knowledge of its varieties has passed out of mind. We shall therefore refer to some of the best, that those who desire to enter the field against the enemy may have fruit in quantity, and of a quality to reward them for their labors. For a single variety for family and for market, we place the Jefferson at the head of the list. For the best three for family use, to ripen in succession, add Washington and Coe's Golden Drop. Add Smith's Orleans for a fourth, and Imperial Gage for a fifth. The Columbia is a desirable sort to plant in apple, pear, or peach orchards, on which to catch curculios. The curculios would be attracted to these trees when in fruit, where they might be caught. The Columbia generally discharges so much juice into the passage made by the larva of the plum curculios, as to drown it. On this account, it is recommended as a protection to our orchards.

The Improvement of the Wild Radish.

Within a few years, successful experiments have been made in the cultivation of the wild parsnip and carrot, resulting in the production of excellent varieties. More recently, M. E. A. Carrière, one of the most distinguished of French horticulturists, has experimented with the Wild Radish. A very interesting account is given by M. C. in the *Journal d'Agriculture Pratique* for February 4th, on the "amelioration" of plants in general, and of the processes and results with the wild radish. We can only briefly indicate the leading points in this admirable paper, using some of the author's drawings to illustrate them. The Wild Radish, or Jointed Charlock (*Raphanus Raphanistrum*), is a common weed in the fields of Europe, as it is in those of the older States in this country. It is different from the English Charlock, or Wild

Mustard, which is also a troublesome weed in many places. The Wild Radish, or Jointed



Fig. 1.



Fig. 7.

Charlock, has pale yellow flowers, which turn whitish or purple, and are marked with veins, and its pod is divided into joints by crosswise constrictions,—characters which serve to distinguish it from the other Charlock. Figure 1 gives the form of the root of the Wild Radish, as taken from the fields, of one-fourth its natural size, in which condition it is woody, and not at all eatable.



Fig. 4.



Fig. 3.



Fig. 5.

The following figures give the different forms of roots, obtained after five years of "amelioration," each reduced in size in the same proportion. In fig. 2 the root is of a deep rose color; that of fig. 3 white, with a violet-colored top; fig. 4 white, with a little violet; the root in fig. 5 is of a dark violet, with a violet flesh; another root of similar shape is black; in fig. 6 the color is of a fine rose, and in fig. 7 entirely white. Whatever their shape or color, all the varieties have a firmer flesh than the radish, and though the radish flavor predominates when tasted raw, when cooked they are more like the turnip. All who have eaten them have pronounced them delicious. Such being in brief the results, we will give the means by which they were obtained. It is commonly supposed that the difference between cultivated and wild varieties is due to the fact that the one has better soil and greater opportunities for development than the other. The character of the soil has its influence, but this alone would not produce the marked results we have described. Selection, and such treatment as will conduce to the desired end, must be added. The object in this case being to develop

roots, the seeds of the wild plant were sown in September, when it was too late for the production of seed, and the whole growth of the plant was expended in the formation of root. At the approach of cold weather, the roots were taken up, the best ones selected, deprived of most of their leaves, and stored for the winter. In spring the roots were set out, and allowed to produce seeds, which were sown in autumn, and the resulting plants treated as before; this process was continued for four generations. It was found that in a heavy, clayey soil the tendency was to produce short roots, while in a warm, light soil, the longer forms predominated. Each year those roots were selected for bearing seed which showed the strongest tendency towards the desired form. Had the object been to make an improvement in the leaves or seeds, spring sowing would have been done, and the development of the root neglected.



Fig. 6.

HOUSE PLANTS—THE SECRET.—A lady who lives in the country recently showed us a box of flowers which she had brought to a friend in the city, the product of the plants in her own dining-room windows. There were Geraniums, Roses, Hyacinths, Crocuses, fine variegated leaves of the beautiful Mrs. Pollock Geranium, a Calla, and other things,—all as beautiful as if they had come from the florist's. There are few private green-houses that could afford a better cutting than this lady's window garden. The secret of her success is this: she lives in an old-fashioned house, built before entries or halls were invented; the room is heated by an open fireplace as long as the weather will allow, a stove being put in only when the cold weather requires it; and no gas is burned. Gas and a furnace are very great conveniences, yet we doubt not that this lady's success in floriculture compensates for their absence. Every time the door is opened, the air of the room is more or less changed, and the plants are under the best possible circumstances that they can be in a dwelling-house. Let those who complain of ill luck with house plants make a note of this, and imitate the conditions as far as possible.

STRAWBERRIES.—There are hundreds of varieties of Strawberries, new and old, but if we ask a Strawberry grower of experience what is the best to plant for family use, the reply will almost invariably be—the Wilson. There are many better berries, but this possesses the quality that most of them lack—reliableness. No variety has yet been found that succeeds so generally in all parts of the country, and none can be so safely planted by the beginner. We, however, would plant other sorts, to test their adaptability to the soil. Jucunda, Charles Downing, Nicanor, and a host of others, are so much better than the Wilson, that where they are found to succeed this old variety is likely to be discarded.

Spring-flowering Bulbs.—The Bulbocodiums.

It sometimes happens that one will know all about a plant from descriptions and figures, yet never have seen it in bloom. So it was with Bulbocodium. Visits to the gardens all around showed no Bulbocodium. Then the writers in the English papers began to complain that it must be lost from cultivation, as they ordered Bulbocodium, and always received something



Fig. 2.

else. With all this we began to be a little anxious about *Bulbocodium*, when we happened in at Thorburn & Co.'s one day, and there was the very bulb staring us in the face, with a label as plain as could be written. Some *Bulbocodiums* were procured, and planted in autumn in a border with other bulbs on trial. One morning, the date now forgotten, but very early in spring, on looking to see if the Crocuses had peeped, there was a breaking of the ground in another part of the bed. A look at the label showed that the early comer was *Bulbocodium*. In a few days, there was a clump of violet-colored flowers, fully opened, beautiful to look upon, while the Crocuses were just showing their tiny spires. Then a snow-storm came, and *Bulbocodium* was rather laughed at for not knowing better than to be out so early. But what did it care for the snow? As soon as the snow was off, it flowered all the more, and kept on just as if it believed that snow was a fertilizer. The engraving gives the flowers about half the real size, with the bulb attached. Of course a portion of the flower is below the surface of the soil. The individual flowers are not very beautiful when taken singly, as they have a tendency to become double and rather irregular; but a mass of them is very bright and cheering. The leaves appear after the flowers have withered; there is a kind with leaves variegated with yellow. The plant multiplies rapidly by the formation of new bulbs. Every one who plants bulbs is sure to have a plenty of Crocuses; but while the Crocus deserves its popularity, we put in a claim for the *Bulbocodium*. It is a pity such a pretty plant had not a more

The Variegated Abutilon.

Having seen notices in the foreign catalogues of *Abutilon Thompsoni*, which had high commendations as a variegated-leaved plant, we were pleased to find a specimen of it from Messrs. Ben-



VARIEGATED ABUTILON.

nett and Davidson, sent at the same time with the Cyclamen, figured on page 137. The plant was introduced from Japan by the Messrs. Veitch, of London, and is without doubt the most novel, and at the same time, the prettiest new plant of the season. The ground color of the leaf is a bright green, which is shaded and mottled with yellow, the marking being so abrupt and dis-

distinct as to give it in many instances the appearance of mosaic work. It is of as free and easy growth and management as the old *Abutilon striatum*, often called "Fairy Bells," and more commonly and incorrectly the "Flowering Maple." It is suitable either for the parlor or conservatory, and has proved to be a valuable plant for outdoor decoration, its peculiar marking and variegation being best developed by bright sunshine. The plant being a "novelty," is now held at a high price, but the *Abutilons* are so easily propagated that it will probably soon become one of our popular plants. We give an engraving of a single leaf of the plant much reduced in size.

Some Varieties of Garden Lilies.

If the readers of the *Agriculturist* do not plant Lilies, it will not be because they have not been now and then reminded that they are among the most satisfactory and desirable flowers. They are hardy, multiply easily, keep in flower a long time, present an interesting variety in habit of plant and shape of flower, and give us colors from the purest white to the most dazzling scarlet. A good sandy loam where the water will not stand suits most of the species. A winter covering of coarse manure will add much to the vigor of the bulbs. In spring planting, the bulbs should be removed very early, before the buds start.

It is customary with florists to take up the bulbs in autumn, and pack them in sand in order to have them dormant for the spring

trade. The bulbs of lilies have fleshy roots, and are more injured by drying than are most others. Many species and varieties are in cultivation, some of which are very rare. We enumerate some of those readily obtained from the florists. GOLDEN BANDED LILY.—(*Lilium auratum*).—2 to 4 feet. White, with chocolate crimson spots, and a golden yellow stripe to each petal; very fragrant. 75c. to \$3.00, according to size.

JAPAN LILIES.—(*L. speciosum*—*L. lancifolium* of most catalogues).—2 to 5 feet. Numerous varieties pure white, rose, and crimson, spotted, etc. 30c. to 75c., according to the variety.

LONG-FLOWERED LILY.—(*L. longiflorum*).—1 to 1½ feet. Long, white, fragrant flowers. 25c.

WHITE LILY.—(*L. candidum*).—The oldest and best known. 3 to 4 feet; fragrant. 15c. to 20c.

TURK'S CAP LILY.—(*L. Martagon*).—3 to 5 feet in height. White to purple. 40c. to 50c.

CHALCEDONIAN LILY.—(*L. Chalcedonicum*).—3 to 4 feet; flowers a most brilliant scarlet, of the shape shown in the engraving. 35c. to 40c.

ISABELLE LILY.—(*L. testaceum*—*L. excelsum*, etc.).—4 to 5 feet; buff or manken color, with scarlet anthers. One of the most beautiful species.

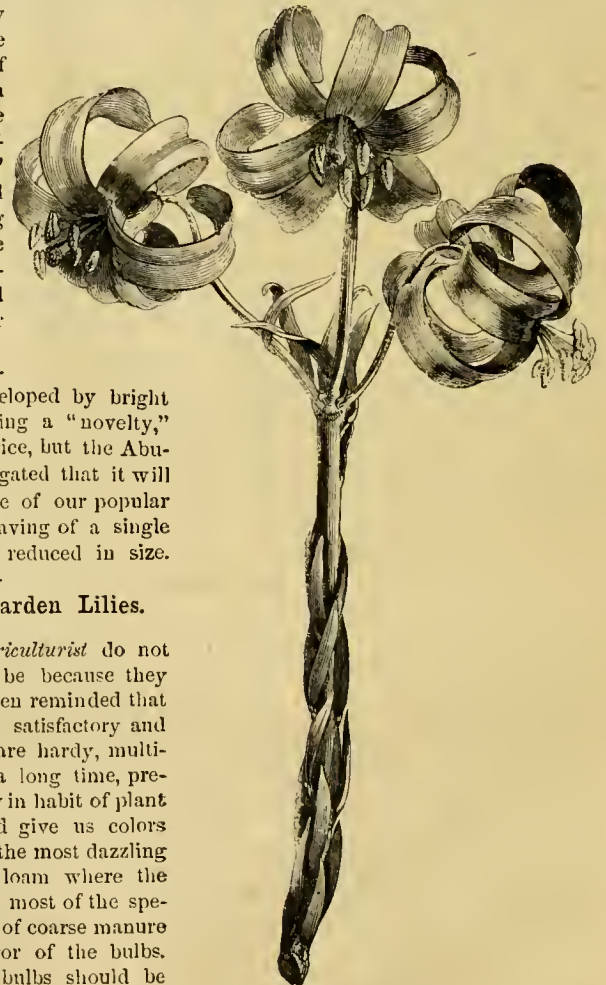
UMBEL-FLOWERED LILY.—(*L. croccum*—*L. umbellatum*, etc.).—2 feet in height. Orange, and variously spotted, with flowers upright. 50c.

The above prices are those of the leading New York florists, who vary slightly in their prices for different varieties, but a collection purchased from either would probably cost about the same. It is best to allow the bulbs to remain for several years without taking them up, as they then form clumps of strong flowering plants. There is a small caterpillar that is very destructive to the



SPRING BULBODIUM—(*B. vernum*.)

popular name. Were it called something fanciful and pleasing, like Snow-drop or Snowflake, it would be better known than it now is.



CHALCEDONIAN LILY.

foliage. If a light-colored, semi-transparent spot is seen upon a leaf, a caterpillar will be found at work on the under side. Crush the rascal.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

A Rustic Jardinnet.

The French word *Jardinnet* (pronounced jar-de-nay) means a small garden, and is usually applied to small enclosures or beds margined with ornamental pottery work. The name is also given to large terra-cotta vases intended for growing plants.



RUSTIC JARDINET.

Some very beautiful ones of this description are now imported, some of them made in imitation of the trunk of a tree. One of our friends, not wishing to pay the high price asked for the imported article, has invented a home-made one, which is more "rustic" in appearance, and answers every purpose of the more costly affair. The lower part of a keg furnishes the receptacle, and split staves, nailed to this, support it at the desired height. The whole is then covered with bark neatly tacked on. Lichens—those ashen-colored and brownish plants found on the trunks of trees and often incorrectly called mosses—are used here and there with good effect. Such plants as are suitable for hanging baskets are appropriate for a *jardinnet* of this kind.

Household Management.

BY MRS. H. M. R., COLUMBIA CO., PA.

True economy does not consist in wearing shabby clothes, "slipshod" shoes, going with half clothing enough to keep warm, nor working yourself and family more than they are able to work, for the sake of getting along without hiring help. No woman ought to be obliged to work on her feet more than seven or eight hours a day; and by proper calculation and order in the household, it is not necessary that she should do so. Where there is a large family and a dairy to be looked after, there should be at least two women to do the work with as much help from the children as they are able to give. Let the work be divided in such a manner that it can be done to the best advantage. Say, let one woman do all the dairy work and help about the washing and ironing. If the dairy is large, this is as much as one can conveniently do, except what sewing, knitting, or reading, she may find time for. Her work will be about the same every day. A word to the girls: The first thing in the morning, see that your hair is neatly combed and put up, and your toilet made in such a way that you would not be ashamed to see any one. Of course you will dress according to your business, but always clean, whole, and tidy. Next get your churning going, strain the milk, work and pack your previous day's butter, etc. By this time the butter in the churn will probably need atten-

tion. As soon as it is washed and salted, empty the churns, wash and scald *thoroughly*, and cool with a pail of cold water. Then skim all the milk that will be ready that day, and thoroughly mix in the churn; cover closely, and it will be ready to churn next morning. Then wash all the pails in two waters, scald thoroughly, and turn down to dry. They should be wiped with a cloth before drying. See that everything in the dairy room is left in perfect order, and your work in this department is done except the straining of the night's milk, which, with rinsing the pails, will take only a few minutes. This will give you nearly or quite all the afternoon of each day to sew, read, or do anything else that is required to be done. It may be necessary on Mondays to let the milk skimming go until a little later, that you can attend to the washing while the other woman is seeing to the dinner, etc. Of course in all large dairies the churning is done by machinery. Now we will see how the woman in the kitchen gets along. We will commence with Monday and follow her through the week, as her work is necessarily varied. If you are well, never let trifles interfere with your daily duties. Let Monday be washing day; Tuesday baking; Wednesday iron, with the dairy girl's help; Thursday, see that everything is mended and in a proper condition to put on; Friday, general baking day; Saturday, general cleaning up. This ordinarily ought not to take longer than until two o'clock in the afternoon, but of course there will be extras some days, which will keep you pretty busy all day. The chamber work and keeping the house, except the kitchen, in order, may be done by either, as circumstances require, or by both, but if by both, let each one have her particular rooms, and look after them entirely. By following this method, or some other equally good, you will have time nearly every afternoon to devote to whatever you may think proper. But never allow yourselves to go slovenly, for of all things a slovenly woman is the most disgusting. There is no excuse for going with the hair looking like a fright, and hanging half way down the back a good part of the day, as too many farmers' wives do. It takes no more time to put it in order the first thing in the morning than the last thing at night, and I am sure if it pays to comb it for a few hours at night, it will pay to do it for all day.

An Ornamental Pineushion.

A very pretty Pineushion can be made in the following manner: Cut a square piece of satin, merino, or silk, and have a grape vine with fruit, arranged in the form of a wreath, stamped in the center. The leaves, stems, and tendrils, should be embroidered with white silk in the ordinary over-stitch, and upon each dot that represents a grape, fasten a wax bead of the size in *a*. Cut for the under side a square like the one em-

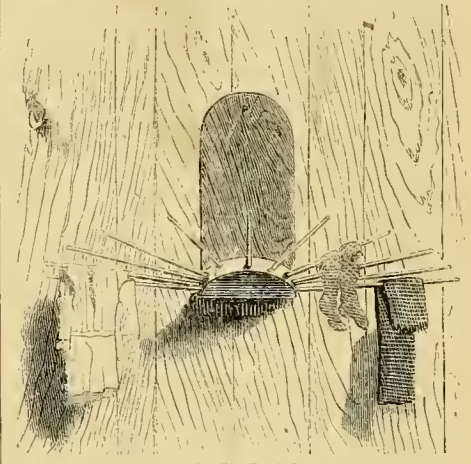


VINE FOR PINEUSHION.

broidered, and cover both over a cushion made of some common, thick material, stuffed with bran or sawdust; finish by fastening a quilling of white satin ribbon around the edge. The shape is improved by cutting each side of the material a little hollow. The color may be left to choice. A cushion of this kind makes a very pretty bridal present. The engraving shows a portion of the grape-vine wreath of about half the size needed for a large cushion.

Towel Rack and Clothes Airer.

There are several patented articles which are very convenient for drying towels, airing clothes after ironing, etc., but as a patent is a sort of challenge, and as we like with a few common tools to feel independent in such matters, we sometimes try our hand and see if we cannot make as good an article as we can buy. A three-inch piece was sawed off the end of a ten-inch oak slab, near the but, where the slab was fully four inches thick. It was barked, then smoothed and shaped. A board $2\frac{1}{2}$ feet long, and ten inches wide, was fastened to it by one end with two three-quarter-inch oak pins; and then holes were bored so as to receive eight dogwood sticks, three feet long, and an inch thick at the butts. These were driven in snug, and the



TOWEL RACK.

affair, looking like half a wagon wheel without the felloe, was hung up just high enough to clear the heads of persons walking under it. We find it a great convenience—not in the way at all; occupying no part of the floor; never falling down; out of reach of dogs, cats, and children. The engraving shows the uses and shape of the article.

The Table—Order and Ornament.

Some articles with the above heading have already been given. They were begun with a view of introducing the matter of simple ornamentation of the table, a division of the subject which has not yet been reached. It seems that what little has been said upon order has touched a point upon which our readers are interested. And why should they not be? If there is anything upon which a good housekeeper prides herself, it is her table, and if there is anything about that that is worth knowing which she does not know, she is ready to learn. We do not aim at introducing any "wrinkles" to induce "plain people" to imitate what are called fashionable folks. Our idea is to give such hints as will enable every one, no matter what her condition as to wealth may be, to make the best of what she has. If the housekeeper who lives in a log house in a Western clearing has put her pork and beans on a neatly arranged table, and had them served with order and propriety, she has done her best, and need not be ashamed should the President himself happen along at dinner time. Whatever there may be for dinner or other meal, and whoever may be the accidental guest, don't apologize. It places all parties in an unpleasant position, and does no good. Give the guest the best there is; serve pork and beans or other plain food with as much attention as if it were the choicest dish; and if the guest cannot appreciate the hospitality, he is not worthy of further thought. Several letters have been received asking questions concerning the table, to some of which we briefly reply. "Which is the head of the table?" One lady claims that her end is the head, and her husband differs from her. It is a delicate matter to decide between husband and wife; we will only state that we were brought up in the notion that the husband was the head of the family, and with

this view the place where he sits would be the head of the table. If this does not satisfy our inquiring friend, she must refer the matter to the next Woman's Rights Convention. "How should guests be seated?"—asks another. If the guest is a gentleman, his seat should be at the right hand of the lady of the house, and if a lady, her place is at the right of the head of the family. This is the proper way, but circumstances may modify it, as in families where there are young children for the mother to look after, and who must consequently be near her. All such matters depend upon circumstances. Where there are several guests, and strict etiquette is observed, the host asks the gentleman who is to be particularly honored to wait upon his wife to the table, while he takes the lady who is to sit at his right hand. Where there are several visitors, other things being equal, the most attention is shown to the greatest stranger, but age—if there be marked distinctions in this respect—takes precedence of everything else. No matter how "distinguished" may be the other persons present, the old gentleman or lady should have the place of honor. "Should milk and sugar be passed for each one to use in his or her own tea or coffee, or should the lady of the house add them?"—This is a question upon which we have known sensible people to differ. Some ladies think it their prerogative to prepare the cup before it is passed. Our own notions incline the other way. Some take their tea and coffee "dressed," and others like it "bare-foot," as we once heard a backwoodsman express the difference between coffee with sugar and milk, and without. Some take milk and no sugar, and *vice versa*; and again, tastes differ very much as to the quantity of these additions. We know of one person who does not consider his coffee as sweetened unless he can dip up some undissolved sugar from the bottom of his cup. The only objection we have heard to passing the milk and sugar is that it is "too hotel like." If hotels have found out how their guests are best suited, it seems to us an argument in favor of the practice, rather than against it. Those who advocate the propriety of "seasoning" tea and coffee by the lady of the house have the majority with them, but we think the other method worthy of consideration by those who would consult the comfort of those who sit at their tables; at any rate its adoption would avoid the often repeated "Is your tea agreeable?"

Hints on House Cleaning.

BY MRS. S. O. JOHNSON.

As the spring days approach, the housewife feels her daily cares increase. Every closet, drawer, and piece-bag must be ransacked, overlooked, and cleared up for the coming summer. Carpets must be taken up and shaken, beds well beaten, and bedsteads washed in strong brine to destroy all insects, etc. As any thing that can lessen the labor of a housekeeper is desirable, I venture to contribute my mite. Save the tea leaves for a few days, then steep them in a tin pail or pan for half an hour, strain through a sieve, and use the tea to wash all varnished paint. It requires very little rubbing or "elbow polish," as the tea acts as a strong detergent, cleansing the paint from its impurities, and making the varnish shine equal to new. It cleanses window sashes and oil cloths; indeed, any varnished surface is improved by its application. It washes window panes and mirrors much better than soap and water, and is excellent for cleansing black walnut picture and looking-glass frames. It will not do to wash unvarnished paint with it. Whiting is unequalled for cleansing white paint. Take a small quantity on a damp flannel, rub lightly over the surface, and you will be surprised at its effects. Wall papers are readily cleansed by tying a soft cloth over a broom, and sweeping down the walls carefully. The dust and ashes of furnaces and stoves are deposited in every crack and crevice of our rooms, and require vigilant and active treatment, for their removal. Carpets absorb great quantities of them. All who can afford it will find it a great improvement to use straw matting in sum-

mer, and in autumn cover them with carpet linings or even common newspapers, then put down the carpets over them. Cleansing silver is not an easy task; the use of kerosene will greatly facilitate the operation. Wet a flannel cloth in the oil, dip in dry whiting, and thoroughly rub the plated or silver ware; throw it into a dish of scalding soap-suds, wipe with a soft flannel, and polish with a chamois skin. Your silver or plate will look equal to that exhibited in a jeweler's window, and will retain its brilliancy for six months, if once a week, when washed, it is polished with a chamois skin. Bright silver adds much to the beauty of a table, and is easily attained by this method. Some may think it will injure the plate. I have used it spring and fall for five years, and neither plated articles nor silver sustain any injury. Those who use brass andirons will find it equally efficacious in restoring their brightness. Old feather beds and pillows are greatly improved by putting them on a clean grass plot during a heavy shower; let the beds become thoroughly wetted, turning them on both sides. Let them lie out until thoroughly dry, then beat them with rods; this will lighten up the feathers and make them much more healthful to sleep upon. It removes dust and rejuvenates the feathers.

Household Talks.

BY AUNT HATTIE.

My doctor often says to me, "Do you know that not one family in ten has good bread? Now, if you would benefit the human race, send a good recipe to the *Agriculturist* and tell the people how to make good, wholesome, sweet bread.".... "I would do so, Doctor, but there are so many things required in order to make good bread that it is difficult to give a recipe. They must have good flour.".... "Tell them that.".... "And they must have good yeast.".... "Well, tell them that.".... "And good judgment, perseverance, and good sense.".... "Well, tell them that. You write it, the editors will publish it, and millions will be benefited; half the doctors might go to farming if the women would invariably put good bread upon the table.".... "Many persons will not do just as the recipe tells them, and the blame will fall back upon me.".... "Tell them to do just as the recipe has it. It is not honest to take a recipe and mix it up with one's own ideas." Here are my directions for

HOME-MADE YEAST.—Take six large potatoes of a good kind, pare, and boil until soft, then mash as for the table. Boil a small handful of hops in two quarts of water for a few moments. Put the potatoes into a colander and rub through as much as possible; then pour on the hop water, and wash the remaining potato pulp through with it. When all is strained, return it to the kettle to boil. Take a tablespoonful of ground ginger and two tablespoonfuls of flour; mix with a very little water to a smooth paste, add more water to make of a thin batter; add to this a tablespoonful of salt and half a teaspoonful of sugar, which pour gently into the boiling hop and potato water, stirring all the time, to prevent its burning. Allow it to boil a few moments, then take from the stove and pour into a crock to cool. When warm as new milk, or lukewarm, stir well into it a teaspoonful of lively yeast, and keep of an even temperature until well risen, when it should be put into a suitable jug and corked loosely for a few days. After a few days, drive the cork in tight, and remember to keep it well corked; also shake up the yeast well before taking out a supply for bread-making. This yeast will keep any reasonable time, as the sugar, ginger, and salt, are excellent preserving agents. Persons who have been in the habit of using a pint or a quart of flour will say Aunt Hattie has made a mistake about the quantity of flour; not at all,—two tablespoonfuls is all that is required in this yeast.

MAKING BREAD.—I set my sponge about 8 o'clock in the evening. I consider the bread better when about a dozen potatoes are passed through the colander into the flour, but this is not always convenient, and I sometimes omit them. When this is the case, I pour about a quart of boiling water

into the flour, cooling with cold water until of the proper temperature for the yeast to be added; but inexperienced bread-makers had better mix with water a little more than lukewarm. Sift into the bread-bowl about seven quarts of flour, make a hole in the centre, and pour in about two quarts of warm water and a little salt; stir in some of the flour until you have made a moderately stiff batter. If it is so hot that you cannot bear to hold your finger in the batter, it is too warm for the yeast, and should be allowed to stand until lukewarm; then add a teaspoonful of yeast, and stir vigorously for a good while. The more it is beaten, the better, provided that it does not cool below the lukewarm point. Sprinkle a little flour over the batter, cover with a large milk-pan as closely as possible, cover this again with a blanket, and place in a warm room until morning. The first thing in the morning, mix the bread. By taking care, the flour may be introduced into the batter without its adhering to the hands; but where it does do so, it should be immediately rubbed off with some of the dry flour. Also, where it adheres to the sides of the bowl, it should be removed in the same manner. Be careful not to get too much flour into the dough. It should be spongy and spring under the hands while being kneaded; do not consider this part of the process complete until the bowl is perfectly free from dough, and until the hands may go in and out without sticking. Make the mass into a round ball, sprinkle a little flour on the bottom of the bowl, return the dough, and let it stay in a warm place until well risen. It should be covered with a clean cloth and blanket. In two hours it should have risen so that two or three cracks, an inch wide, are formed on its surface, when it may be moulded into loaves. If two or more loaves are put into the same pan or tin, a space of an inch and a half or two inches should be left between the loaves; they will rise sufficiently to touch, and will divide much easier after being baked. Ordinary-sized loaves will require an hour and a quarter in a moderate oven; if they are very large, it would be well for the inexperienced to thrust a thin skewer or knitting needle into the loaf. If it comes out free and clean, the bread is baked sufficiently. Do not divide the loaves or put them away into the crock until quite cold. Folding in a clean towel until nearly cold has a tendency to soften the crust, and is considered an advantage. To obtain good bread the following precautions must be observed: Be careful that the batter is lukewarm when the yeast is added, and as it will take some time to rise, it must be kept as nearly as possible at this temperature; hence the necessity of covering closely with the pan and blanket. The dough should be kneaded and moulded in a warm room, that it may not get cold. The loaves should be covered also. Avoid putting the pans of dough on the stove or on the hot-water boiler, as the bottom gets too warm and rises before the whole. If the dough gets cold, however, you will be obliged to resort to this means to obtain a fermenting temperature. Bread should be thoroughly cooked, and it is well to always make the loaves the same size, and by looking at the clock the baking may in a few trials be regulated to a nicety. If the bread should be clammy or doughy, make the loaf the same size next time, and bake a little longer, or make the loaf smaller and bake the same length of time.

A DELICIOUS DESSERT is made as follows: Put a small teaspoonful of tapioca to soak for a few hours in warm water. Pare six or eight good cooking apples. Core without dividing, and fill the holes with sugar and a little lemon juice, or grated nutmeg. Pour the tapioca mixture around the apples, grate a very little nutmeg over, and bake an hour, or until done; serve with sweetened cream.

How to Pop Corn.—A "Professor of Pop Corn" says: Put in a pan a heaping teaspoonful of butter or clean lard, a good pinch of salt, and a small handful of pop corn; cover, and put over the fire. Butter or lard improves the popping qualities of the corn, and it pops better than in the wire or screen poppers. If any one knows a better method than the above, let him give it.

BOYS & GIRLS' COLUMNS.

P's that it Pays to Possess.

ADVERTISEMENT—"Boys Wanted."—Wanted, by Uncle Sam, a lot of first-class Boys for the future needs of his estate. A few choice, well-selected boys for Presidents; a number of prime quality, for Senators and Governors; an assortment of good article for Congressmen, Legislators, and Mayors, for States and Cities now existing, and to be speedily erected; a large number, extra-fine, for Judges, College-presidents, and Professors, Doctors of Law, Divinity, and Medicine. Boys wanted to engineer the building of railways and canals, to get the gold out of the mountains, the iron from the hills, and the coal from everywhere. Boys wanted to run steamship-lines to Europe, Asia, and the rest of creation. Boys wanted to farm the prairies, to bridge the rivers, to run factories, to own stores, wholesale and retail, and for other employments too numerous to mention.

Said boys must possess the following Requisites to Success. They must be

In Action, prompt, patient, persevering, and painstaking.

In Mind, practical, progressive, and peaceable.

In Manners, pleasing and polite.

In Life, pure, principled, pious, patriotic, and prayerful.

All boys who can satisfy the above conditions can be readily supplied with good places, and none others need apply to

"UNCLE SAM."

Now, boys, there is your chance for the future. Count up these characteristics; see what they mean; possess them, and you will be sure to reap an abundant reward.

Dealing With Thieves.

The following story is related by an exchange, of Jacob Sheafe, Esq., a merchant of Portsmouth, in former times: A man had purchased some wool of him, which he had weighed and paid for, and Mr. Sheafe had gone to the back room to get change for a note. Happening to turn his head when there, he saw in a glass, which swung so as to reflect the shop, a stout arm reach up and take from the shelf a heavy cheese. Instead of appearing suddenly and rebuking the man for his theft, as another would, thereby losing his custom forever, the crafty old gentleman gave the thief his change as if nothing had happened, and then, under the pretence of lifting the bag to lay it on the horse for him, took hold of it and exclaimed—"Why, bless me! I must have reckoned the weight wrong." "Oh, no!" said the other, "you may be sure you have not, for I counted with you." "Well, well, we won't dispute the matter, it's so easily tried," said Mr. S., putting the bag into the scales again. "There," said he, "I told you so; knew that I was right—made a mistake of nearly twenty pounds; however, if you don't want the whole, you needn't have it; I'll take part of it out." "No!" said the other, staying the hands of Mr. S. on the way to the strings of the bag. "I guess I'll take the whole." And this he did, paying for dishonesty by receiving the skim milk cheese for the price of wool. On another occasion Mr. S. missed a barrel of pork. A few months after, a man one day asked him the question, "Did you ever find out who took that pork, Mr. Sheafe?" "Yes," was the reply; "you are the fellow! For none but myself and the thief knew of the loss." The fellow was detected by the shrewd dealer, who possessed the happy faculty of knowing when to be silent.

Use for the Fire-fly.

Mr. Parton, in the February number of "Our Young Folks," relates that during the recent war two prisoners who had been confined in Andersonville eleven months, hearing that Sherman was at Atlanta, about two hundred and forty miles distant, determined to make their escape and try to reach that point. One of them had a watch which contained a compass, and with this they expected to direct their course, which was northwest. But as they were to travel by night they determined not to start until they could get a box of matches to give necessary light to consult the compass. This, however, they failed to do, and at last, by the assistance of a colored man, they got away and lay hidden until evening, when they started through the woods. About midnight they came to a road which seemed to go exactly northwest. But it was so cloudy they could not see the North Star, they could not consult the compass, and they well knew that a mistake in the direction would lead to recapture and death. The more they talked it over, the less certain they grew. But presently one of them caught a fire-fly, and taking it between his thumb and finger, held it over the compass. To their great joy they found it gave light enough for their purpose, and very soon they ascertained that surely enough the road led straight to the Union Army, and eight nights of travel brought them safely to it.



A Picture Story for the Times.—Write it out yourself.

New Puzzles to be Answered.

No. 340. Puzzle Inscription.—Ec nouoy Dloti. One of our clerks brought us the above inscription, which he wishes very much to have translated. He did not inform us what language it is in. Please find out and read it.



No. 341. Illustrated Rebus.—A fact of recent occurrence.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the March number, page 103...No. 339. Illustrated Rebus.—Honor upholds the humble in spirit. The following have sent in correct answers. George Brenner, Mrs. J. S. Coles, Frank Lockwood, Lilla Kirk. "Lucy," B. F. Greenman, Milton S. Lavidis, J. McK. Wray, Eldridge Johnson, D. R. Harford, John Conlon, Mary J. Sanborn, Henry Schulz, J. Milton Snyder, F. T. Snyder, Henry Burkholder, D. M. Munro, Lunette Drew, John Heglin, Maggie Wear, A. J. Deitrick, Albert H. Hall, James E. Eshleman, E. M. Clemens, Philip H. Ittel, William D. Hilliard, M. C. Hunter, A. D. Newton, Jas. Mudd, W. A. Ditson, Nannie Johnson, J. Chenoweth, J. M. Thompson.

The Defective Stone.

"Don't put in that stone," said one mason to another, as they were working together on the rear wall of a church. "Can't you see it's a poor quality, all flaky, and will scale away to pieces?"—"It isn't very good grain, I see; but it fits in here, and I don't want to wait for another. Besides, you can't see it from the ground, and nobody will take the trouble to climb up here to look at it."—"You'd better send for another block. That isn't fit for the wall; it won't stand the weather; and if it should go to pieces, it will damage the whole building."—"I guess it won't damage me, nor you either, so here goes." And he lifted the block of loose-grained, flaky freestone into its bed, though the outer thicknesses cracked and the shell sloughed off. He dashed over it a trowelful of mortar, and went on with the next tier. Nobody could see the defective stone, for it was covered by a projecting buttress, and only the two stone-masons were present when it was laid. But though unseen, it was not safe, and time brought about its own result. Every sunbeam loosened its texture a little, every storm helped to crumble off a minute fragment, and little by little, after many years the stone crumbled away. That was bad enough, but that was not all. It chanced that one of the great beams of the roof rested a few tiers above, directly over the defective block, and as the stone decayed, the beam sank a little. Presently a crack opened in the ceiling, disfiguring the fresco-painting, and the crack grew to a leak, letting in the rain. And when at last the worthless block fell out, the beam dropped down, the roof sunk in, and the church was no longer fit for use, until after the loss of much time, and the expense of much money, a new roof was built, and a new block inserted in the wall. It was only a small defect, but it did much damage in the end.—There is a structure which everybody is building, young and old, each one for himself. It is called character, and in it every act of life is a stone. If day by day we are careful to build our lives with pure, noble, upright deeds, at the end will stand a fair temple, honored by God and man. But, as one leak will sink a ship, and one flaw break a chain, so one mean, dishonorable, untruthful act or word will forever leave its impress and work its influence on our characters. Then, let the several deeds unite to form a perfect day, and one by one the days grow into noble years, and the years, as they slowly pass, will raise at last a beautiful edifice, enduring forever to our praise.

The Care of Canary Birds.

Few pets give more pleasure than these sweet singers. They are so perfectly at home in a cage that in looking at them one does not feel the regret experienced in keeping birds born in the free forest thus confined. Unpainted cages are best for birds, as they will industriously peck at every place that offers a hold to their bills, and a very little paint would poison them. The cage should be hung where plenty of light and air can be enjoyed, not near the ceiling where the atmosphere is usually foul. Opposite a window where the sunshine can come in is the best place. Birds are naturally very cleanly, and their cages should be kept scrupulously neat. A piece of brown paper laid upon the floor and changed every day will keep the floor clean; the perches should be washed frequently. Canaries greatly enjoy their morning bath. Give them clean water in a shallow dish daily, and their curious little freaks over it will afford much amusement. The drinking cup and seed cup should be cleansed and refilled daily. Canary seed is the best regular food; for variety, add summer rape seed, and occasionally a little hemp seed. Fresh fruit, sweet apples, berries, etc., will be relished, and are healthful; they are also very fond of sugar, which should be allowed them only in moderate quantity, as an occasional treat. A bit of cuttle-fish bone for them to peck at should be hung in the upper part of the cage, where it will be kept clean. Occasionally a cage becomes infested with mites,—little insects almost too small to be seen without a microscope,—which greatly irritate the bird, and if not destroyed, may cause its death. Their presence may be known by the bird persistently scratching and pecking at his feathers, especially after settling upon his perch for the night. In such a case wash the cage thoroughly with suds made from carbolic soap, and put a very little of it in their bathing water, which will soon clear out the pests without injury to the bird. With care never to frighten a bird, it may be taught to come to its owner from the cage, to feed from his hand, and even to perform many tricks; the feats of Signor Blitz's trained canaries, which many of our readers have probably seen, show that these household birds are capable of receiving no little education.

Spelling Test.—Read the following sentence to any person desirous of showing his knowledge of spelling and request him to write it out. "It is agreeable business to perceive the unparalleled embarrassment of a harassed peddler gauging the symmetry of a peeled pear which a shy! had stabbed with a pomard heedless the innendoes of the lilies of a cornelian bue when on Wednesday last they endeavored to separate a niece and aunt."



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THE NEW-COMER.—DRAWN FOR THE AMERICAN AGRICULTURIST BY E. FORBES.

Boys who have been away from home to boarding-school will readily understand the feelings of the poor captive in the picture, now for the first time introduced to his new companions. One bullying fellow wants to pick a quarrel with him; another waggish character is about to play a practical joke by slyly pulling his hair; a third is disposed to ridicule him for his low spirits; while a few look on with real sympathy. The poor lonely creature, with no friends made as yet, sadly thinks of his native home, and can find little comfort. Yet if he have the true spirit of a monkey he will soon make his place, yielding to his superiors, putting down his inferiors, and taking rank according to his own merits. No doubt his fast friends will be those who at first gave him sympathy, which his gratitude will more than repay. While you may be amused with the comical figures of these animals, do not forget the lesson of the picture. When a new companion comes to your school or your neighborhood, try to make him feel at home. To take any advantage of such an one is despicably mean. Even if he should afterward prove unworthy of your intimate friendship, the exercise of kind feeling towards him will bring its own happiness to yourself and make you richer than any enjoyment would, that could be had by imposing upon him.

An East Indian Giant Story.

Many years ago a giant living in Ceylon fell in love with the daughter of another giant in Bengal; so he asked her father to let him marry her. But he refused because the lover lived on a little island, and was not of much account. But the Ceylonese determined to have his bride, and so crossed over, seized her, and carried her home. Then her father, in a great rage, started to rescue her, but found on arriving at the straits which separate the island from the main land, that he was not tall enough to wade over.

So back he went through the whole length of India to the Himalaya Mountains, and snatched up two of the largest to throw them into the strait, to fill it up so that he could pass over. But as he strode back with one mountain in each hand, large pieces slipped through his fingers, and thus came the chain of hills which extend for some three hundred miles through the country. It is to be hoped that on finally reaching the island he became reconciled to his son-in-law; but very likely the latter being the larger, made way with him, for, as it happens, the story very provokingly stops here without giving information on this most interesting point.

Too Much Medicine.

Among the American Indians the "Medicine Man" is next in importance to the Chief of the tribe. He is not only the physician, but the priest, prophet, and general agent with supernatural powers, with whom he is supposed to be familiar. During drouth he is in great demand as a rain maker. In this art they are very successful, as when they once commence their ceremonies they never stop until rain begins to fall. Those who have witnessed their performances say that their freaks are of the most extravagant kind, such as would provoke the laughter of all unbelievers in their power. It is related of one of these characters, named Wakhadahakee, that while going through his performances he fired an arrow toward the clouds and promised abundant water. Shortly after a vessel came up the river near the encampment, firing a salute. "Ah, my friends!" said the rain-maker, "my medicine is great—I have brought a thunder-boat." He continued his vaunts and threats from his high place, and truly his predictions were fulfilled; in a few moments the cloud was over the village, and the rain fell in torrents. Mr. Catlin, who related the incident, says it

was a memorable sight. Thunder roared, and livid lightning flashed, and in a moment of consternation, a flash struck one of the Mandan lodges, and killed a beautiful girl. He was rather alarmed lest his fame should be held from him; he ascended the medicine-lodge the next morning, and exclaimed: "My friends, my medicine, you see, is great—it is too great; I am too young, and I was too fast; I knew not when to stop. The wigwam of Mah-silsh is laid low, and many are the eyes that weep for Kokai, the otelope. . . . Who say that the medicine of Wak-ha-dah-ha-kee is not strong?" A unanimous shout of approbation ran through the crowd, and Hair of the White Buffalo, by which epithet he was distinguished before, was thereafter changed to the more familiar and honorable appellation of the "Big Double Medicine."

A Difficult Language.

A Frenchman of our acquaintance relates the following anecdote of himself with great good humor. Shortly after arriving in this country, and while he could speak the language very imperfectly, he was engaged as teacher of French in a young ladies boarding-school. He kept his ears wide open to learn every new phrase, and progressed rapidly. One expression at the meals puzzled him for some time. He noticed that the young ladies often replied "Yes'm," when asked if they would be helped to some of the dishes. He carefully consulted his lexicon, to find the meaning of "Yes'm," but the word was not there. So he asked the principal, who informed him that it was the same as "*Oui, Madame*," in French. He then was able to use the phrase correctly himself. But one day when asked to partake of something he chose to decline, he answered, "Nos'm," greatly to the amusement of the whole family. "They all laugh so happy," said he, in relating it, "I laugh too, very much.

THE BEST JUVENILE MAGAZINE EVER PUBLISHED IN ANY LAND OR LANGUAGE

"OUR YOUNG FOLKS."

The January, February, and March numbers of "OUR YOUNG FOLKS" have been welcomed by the Press and the Public with an enthusiasm never before accorded to a Magazine for Boys and Girls. The great variety and fresh interest of its contents, and the eminent literary skill of the writers, make the Magazine attractive to all intelligent persons, young or old, and give it a permanent value.

The leading serial, "The Story of a Bad Boy," by T. B. ALDRICH, has awakened an eager interest almost without precedent. The experiences and fortunes of *Tom Bailey* are followed with curiosity and delight by hundreds of thousands, and it is safe to state that the interest of the story increases to the end. We copy from the April instalment an account of the demoralization produced in school by the approach of Independence Day, and a part of

TOM BAILEY'S NIGHT BEFORE THE FOURTH.

Two months had elapsed since my arrival at Rivermouth, when the approach of an important celebration produced the greatest excitement among the the juvenile population of the town.

There was very little hard study done in the Temple Grammar School the week preceding the Fourth of July. For my part, my heart and brain were so full of fire-crackers, Roman-candles, rockets, pin-wheels, squibs, and gunpowder in various seductive forms, that I wonder I did n't explode under Mr. Grimshaw's very nose. I could n't do a sum to save me; I could n't tell, for love or money, whether Tallahassee was the capital of Tennessee or of Florida; the present and the pluperfect tenses were inextricably mixed in my memory, and I did n't know a verb from an adjective when I met one. This was not alone my condition, but that of every boy in the school.

Even Mr. Grimshaw was made a sort of accessory to the universal demoralization. In calling the school to order, he always rapped on the table with a heavy ruler. Under the green baize table-cloth, on the exact spot where he usually struck, a certain boy whose name I withhold, placed a fat torpedo. The result was a loud explosion, which caused Mr. Grimshaw to look queer. Charley Marden was at the water-pail at the time, and directed general attention to himself by strangling for several seconds and then squirting a slender thread of water over the blackboard.

Mr. Grimshaw fixed his eyes reproachfully on Charley, but

said nothing. The real culprit (it was n't Charley Marden, but the boy whose name I withhold) instantly regretted his badness, and after school confessed the whole thing to Mr. Grimshaw, who heaped coals of fire upon the nameless boy's head by giving him five cents for the Fourth of July. If Mr. Grimshaw had eaned this unknown youth, the punishment would not have been half so severe.

On the evening of the 3d I retired to bed very early, in order to disarm suspicion. I did n't sleep a wink, waiting for eleven o'clock to come round; and I thought it never would come round, as I lay counting from time to time the slow strokes of the ponderous bell in the steeple of the Old North Church. At length the laggard hour arrived. While the clock was striking I jumped out of bed and began dressing.

My grandfather and Miss Abigail were heavy sleepers, and I might have stolen down stairs and out at the front door undetected; but such a commonplace proceeding did not suit my adventurous disposition. I fastened one end of a rope (it was a few yards cut from Kilty Collins's clothes-line) to the bedpost nearest the window, and cautiously climbed out on the wide pediment over the hall door. I had neglected to knot the rope; the result was that the moment I swung clear of the pediment, I descended like a flash of lightning, and warmed both my hands smartly. The rope, moreover, was four or five feet too short; so I got a fall that would have proved serious had I not tumbled into the

middle of one of the big rose-bushes growing on either side of the steps.

I scrambled out of that without delay, and was congratulating myself on my good luck, when I saw by the light of the setting moon the form of a man leaning over the garden gate. It was one of the town watch, who had probably been observing my operations with curiosity. Seeing no chance of escape, I put a bold face on the matter and walked directly up to him.

"What on airth air you a doin'?" asked the man, grasping the collar of my jacket.

"I live here, sir, if you please," I replied, "and am going to the bonfire. I did n't want to wake up the old folks, that's all."

The man cocked his eye at me in the most amiable manner, and released his hold.

"Boys is boys," he muttered. He did n't attempt to stop me as I slipped through the gate.

Once beyond his clutches I took to my heels and soon reached the Square, where I found forty or fifty fellows assembled, engaged in building a pyramid of tar-barrels. The palms of my hands still tingled so that I could n't join in the sport. I stood in the doorway of the Nautalis Bank, watching the workers, among whom I recognized lots of my schoolmates. They looked like a legion of imps, coming and going in the twilight, busy in raising some infernal edifice. What a Babel of voices it was, everybody directing everybody else, and everybody doing everything wrong!

To show the kind and degree of interest produced by this story, and the other attractive articles in "OUR YOUNG FOLKS," we give the following letter, which expresses fairly the sentiments contained in numerous letters, received daily from all parts of the country.

SPRINGFIELD, Feb. 23., 1869.

TO THE EDITORS OF "OUR YOUNG FOLKS."

"Your magazine is such a source of delight in our family, and at the same time so valuable and instructive to our children, that I feel impelled to write you and thank you for what you are doing for them and for others like them. We have taken the magazine ever since it started, but we think it more interesting than ever this year.

"The 'Story of a Bad Boy' pleases my boys so much that they fairly commit each instal-

ment to memory. Mr. Trowbridge's articles on Glass-Making we have found particularly interesting, and so are the articles by Mr. Parton, and Mr. Hale, and Mrs. Agassiz. I assure you that the monthly arrival of your Magazine is a great event in our household. Expectation gets on tiptoe about the middle of each month, after which time the Post-office boy is closely watched by two pair of eager young eyes on the lookout for what they call 'the best magazine that ever was.'

"In sober earnest, dear Editors, I feel that you are doing my children an inestimable good, that you are furnishing to them a style of reading in every respect admirable and particularly adapted to them; and as I see the interest with which they read what you prepare for them, and observe its restraining and developing influence upon their young minds, I feel grateful that in their education I have such a valuable assistant as your magazine.

Respectfully yours
Mrs. ———."

Besides the "Story of a Bad Boy," "OUR YOUNG FOLKS" for this year contains an exceedingly interesting and valuable series of papers by REV. E. E. HALE, suggesting *How to Talk, How to Write, How to Read, How to Travel, How to Act in Society, and How to Work*; a number of articles by JAMES PARTON, including *Biographical Sketches of the noted Portuguese Discoverers and Navigators*; careful and graphic descriptions of *Glass-Making, Ship-Building, Coal-Mining*, and other attractive branches of Industry by J. T. TROWBRIDGE; a very valuable series of articles by MRS. PROF. AGASSIZ, the eminent naturalist, on *Coal Deposits, Coral Animals and Reefs, Earthquakes, etc.*, several articles on interesting topics of *American History* by J. H. A. BONE; *Declamations* by ELIJAH KELLOGG; *Dialogues* by EPES SARGENT, and other excellent articles by popular writers, all illustrated by the most skillful artists.

"OUR YOUNG FOLKS" is only Two Dollars a year, and the numbers for January, February, March, and April, 1869, will be sent free to any one who wishes to examine the Magazine, on application to the Publishers,

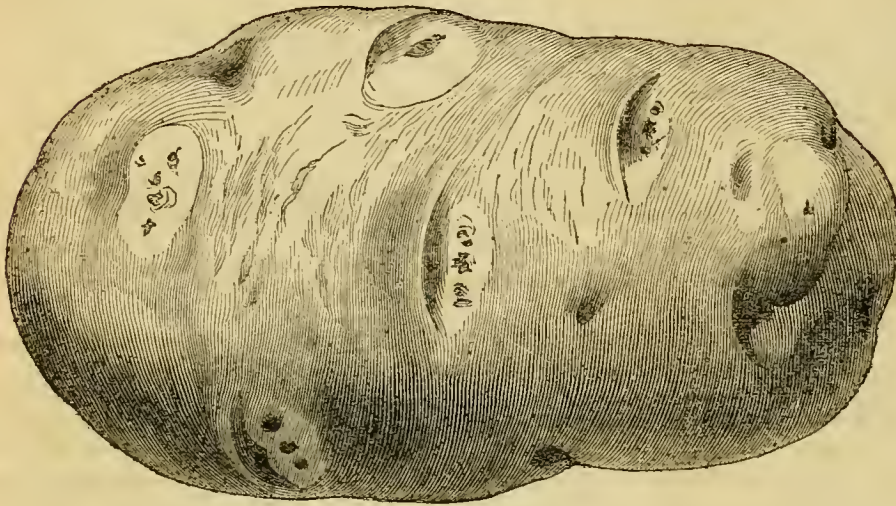
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(Successors to Ticknor & Fields,)

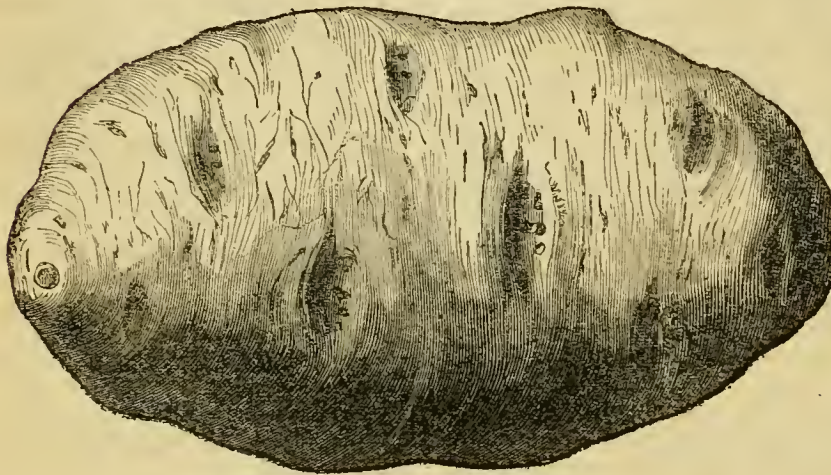
124 Tremont Street, Boston.

NEW AND CHOICE POTATOES.

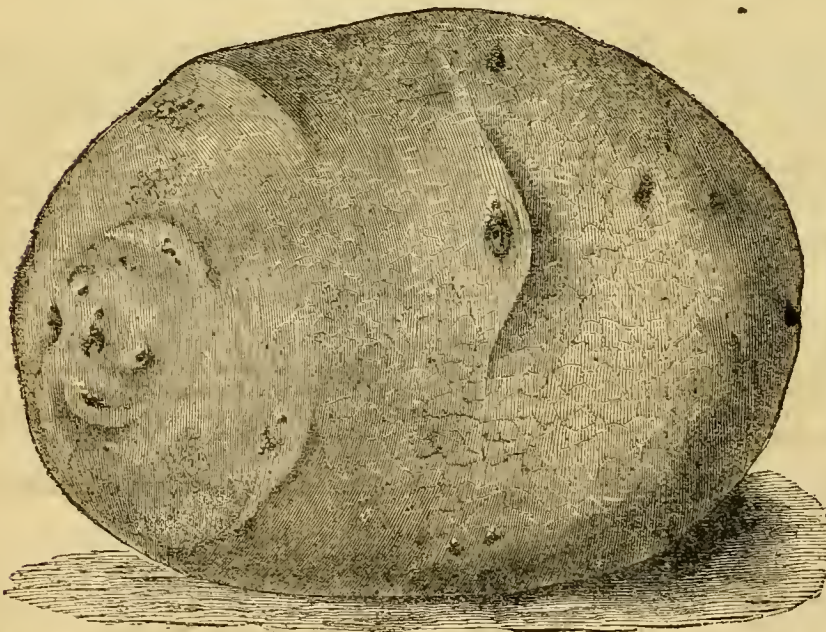
EARLY ROSE.



CLIMAX.



BRESEE'S PROLIFIC, OR No. 2.



EARLY ROSE.

Among the many thousands of our patrons to whom we furnished this valuable potato, we have yet to hear from the first one who is not fully satisfied with his purchase. The only regret expressed is, that they had not procured more. We are daily in receipt of the most flattering testimonials, not only of its earliness and good quality, but of its astonishing productiveness, some of which seem almost fabulous. Several reports of having grown a barrel from a single pound; reports of a yield of one hundred-fold are of everyday occurrence.

We have no hesitation in recommending it as the *earliest*, *most productive*, and of *better quality* than any other variety in cultivation. It retains its good quality through the entire season, until a new crop is ready for the market. It is particularly recommended for culture in the Southern States, as new potatoes can be sent to the New York market as early as the more common varieties from Bermuda.

We are now receiving cash orders at the prices annexed, which, however, cannot be considered as binding for any stated time, as from present appearances the supply will not equal the demand.

One pound, \$1.00; Three pounds, \$2.00, by mail, post-paid. One peck, (15 lbs.), \$5.00; $\frac{1}{2}$ bush., \$8.00; 1 bush., (60 lbs.), \$15.00; 1 bbl., (165 lbs.) \$40.00; 5 bbls., \$175.00. Prices to the trade, in larger quantities, will be given upon application. The freight on all packages by express, boat, or railroad, to be paid by the purchaser. No charge for packages or cartage.

CLIMAX.

The CLIMAX is a seedling of the Early Goodrich, and is thus described by the raiser:

"It has a stout, erect stalk, large leaves; tuber, about medium size, smooth, cylindrical form, swelled out at center; eyes, shallow, but strongly defined; skin, considerably netted or russet, tough, white; flesh, entirely white, solid, heavy, brittle, and never hollow; boils through quickly, with no hard core at center, is mealy, of snowy whiteness, and of superior table quality. It is equally productive with the Early Rose, but a few days later, earlier than the Early Goodrich, while its keeping qualities are as good as the Peachblows."

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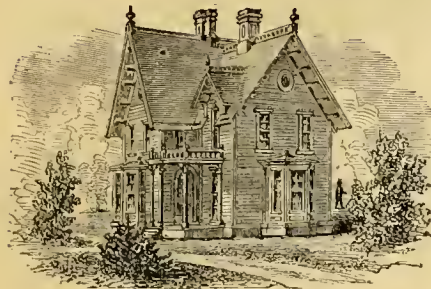
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Send one dollar and receive by mail, post-paid, three plants each of the following five varieties. Davison's Thornless, Clarke, and Philadelphia Raspberry, Wilson's and Kittatiny Blackberry.
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Having been the original introducer of the Hubbard Squash, Marblehead Mammoth Cabbage, and many other new things, I still continue to make the raising of the seed of new and rare vegetables a specialty, in addition to the standard kinds. Catalogues gratis to all.
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Fruit and Ornamental Trees, Nursery Stocks, Small Evergreens, Forest Trees, Hedge Plants, Roses, Grapes, Evergreens, Green-house and Bedding Plants, all of best sorts and shipping sizes. Send 10c. for three spring Catalogues.
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SPRING 1869.

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ALDERNEYS of good pedigree for sale by A. G. W. FARLEE, Cresskill, N. J., on Northern Railroad, one hour from New York.

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See statement of Hon. John Danforth, on page 453, of December Agriculturist.

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Eggs for Hatching.

White Asiatic Brahmas, pure stock, pen-comb cocks, 12 lbs.; hens, 7 to 10; 13 eggs, \$2; 48, \$6. Houdans from pure imported stock, very handsome, \$6 per doz. Grey Dorking, White Dorking, (rose-comb), Silver-spangled, Hamburg, Golden-spangled Hamburg, Golden-spangled Polish, \$3 per doz. Aylesbury, and Rouen Ducks, \$3.50 per dozen. Address WM. S. CARPENTER, Iye, Westchester Co., N. Y.

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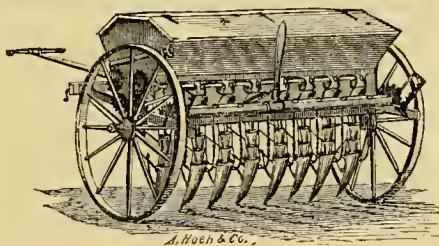
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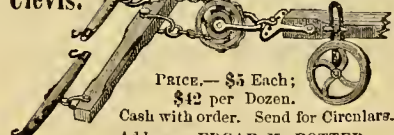
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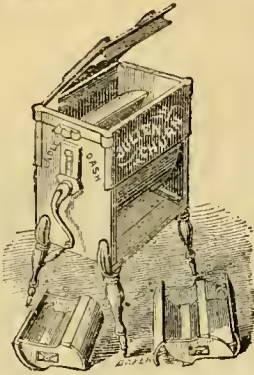
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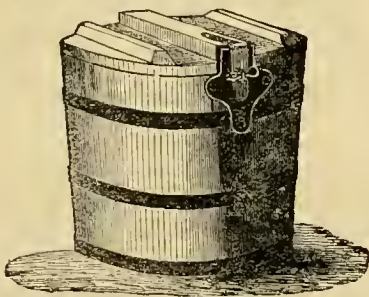
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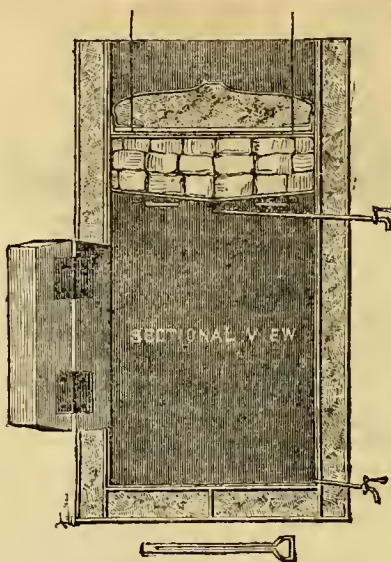
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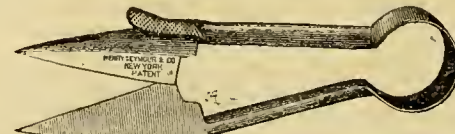
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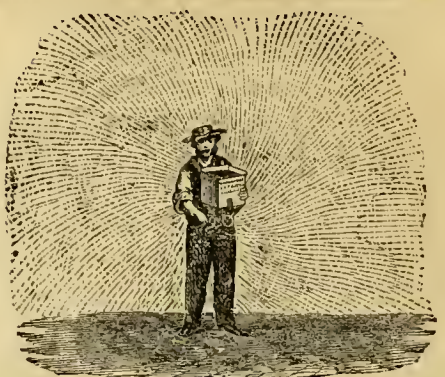
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From the American Agriculturist.

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10 Java Coffee, raw.....	".....	at 35.....	3.50
1 Imperial.....	H. M. Lanphear.....	at 1.25.....	1.25
10 Black.....	".....	at 1.00.....	1.00
10 Java Coffee, raw.....	".....	at 35.....	3.50
3 Imperial.....	B. B. Lloyd.....	at 1.25.....	3.75
1 Imperial.....	Horace Morgan.....	at 1.25.....	1.25
1 Black.....	".....	at 1.25.....	1.25
2 Imperial.....	Simon String.....	at 1.25.....	2.50
5 Black.....	Wm. Bishop.....	at 1.00.....	5.00
3 Uncolored Japan, J. Marr.....	".....	at 1.25.....	3.75
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4 Imperial.....	A. Morris.....	at 1.25.....	5.00
1½ Imperial.....	Thos. Higgins.....	at 1.25.....	1.88
1½ Black.....	".....	at 1.00.....	1.50
5 Black.....	A. Hickox.....	at 1.00.....	5.00
3 Black.....	J. Farley.....	at 1.00.....	3.00
2 Imperial.....	".....	at 1.00.....	2.00
1½ Imperial.....	Mr. Carey.....	at 1.25.....	1.87
1½ Black.....	".....	at 1.00.....	1.50
10 English Breakfast, T. Hudson.....	".....	at 1.20.....	12.00

\$65.55

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Caution.—As some concerns, in this city and other places, imitate our name and style of advertising and doing business, it is important that our friends should be very careful to write our address in full, and also to put on the number of our Post-Office Box, as appears in this advertisement. This will prevent their orders from getting into the hands of these bogus imitators.

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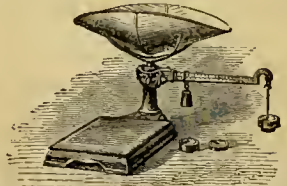
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VOLUME XXVIII.—No. 5.

NEW YORK, MAY, 1869.

NEW SERIES—No. 268.



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THE CHALK WAGONER.—FROM A PAINTING BY ROSA BONHEUR.—Drawn and Engraved for the American Agriculturist.

Rosa Bonheur ranks among the most eminent of living painters of animals, if she be not, indeed, the most celebrated of all. A number of her pictures are in this country, and those who have had the privilege of seeing them will recollect what marvels of color and drawing they are. Her portraits of single animals are marked by wonderful individuality, while her compositions show a vigor and action which but few artists are capable of imparting to their work. The pictures of this artist do not, as is often the case, depend upon color for their attractiveness; for when her compositions are

rendered in the black and white of an engraving, her power as an artist is still manifest. The engraving we present here is known by the English name of "The Chalk Wagoner." It is highly probable that the artist intended to represent a teamster with a load of bags of prepared plaster of Paris. The character of the load and the accepted title of the picture are of but little consequence, as the interest centers in the animals. The scene is an essentially foreign one, and one which recalls the rural districts of France. We have here the common type of the ponderous Normandy horse.

The leader travels at his ease down the hill, and is evidently looking out for any thing new and curious that may occur; but the solid shaft-horse shows by his whole expression that he feels the responsibility of bringing a heavily loaded cart down hill, over a rough road. Those familiar with Rosa Bonheur's paintings, can imagine the brilliant effect of the three scarlet tassels upon the heads, the pieces of deep blue sheepskin topping the high collars, and the bright-colored (red and yellow) saddle-cloths upon the gray or iron-gray horses, all kept well brushed and clear of the dust of the plaster kiln.

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AMERICAN AGRICULTURIST.

NEW-YORK, MAY, 1869.

"Will it pay?" Shall we reduce every thing to a monetary standard and consider the question of pay or no pay as estimated in hard cash or greenbacks? This is not necessary, for work and investments pay in many more ways than in money simply. Still, in farming operations, questions which should continually recur are—Will it pay? Shall I get my money back? Can I afford it? Farmers' finances do not bear close scrutiny, as a rule. They make money when and where they do not know it, and they "make losses" in the same way. A close system of accounts, kept as accurately as those of a well-managed counting-house, would show many a farmer that crops on which he thinks he makes most are really less profitable than others. A good farmer said, "If I can get a dollar and a half a barrel for potatoes, I can't afford to raise corn at a dollar a bushel." If any man doubts the statement, let him figure upon it. Still, many operations which may pay pecuniarily, cost so much in anxiety, or are so uncertain in their returns, that they should be entered upon with caution. The culture of certain commercial crops, hops, tobacco, etc., may be thus classed. Almost every thing pays that makes hard labor lighter, that works the brain in place of the muscles, that makes horses do the labor of men, and that makes the farmer's life and that of his wife and family more comfortable. Every man considers the question, Will it pay? but it is as often decided wrongly as rightly.

Hints About Work.

Labor, this month, needs to follow well-matured plans. We shall have rain storms, coming just when we do not want them, putting us back in our work, giving weeds a start, rotting the seed in the ground, and making the land too wet to work. These troubles tend to make men sour, and to dishearten them; but if work is planned ahead for both fair and rainy weather, we shall find that the "set-backs" of May are not very serious ones after all. The season, as it progresses, makes up for early deficiencies, and it is a satisfaction to believe that late, cold springs, or cold snaps that put vegetation back, often do tenfold more damage to insect life, which thus receives often severe checks.

Spring Groins and Grass.—It seldom pays to sow any spring grain after the first of May. In very backward seasons it may be done, but every day's delay diminishes the probability of securing good crops. If the prime object of sowing grain is to seed to grass, (for the impression is prevalent that to get a good catch of grass seed, it must be sown with some grain crop,—which is a great mistake,) it would be much better to sow the grass alone on the well-harrowed surface, and brush it in lightly.

Roots.—Beets and mangels ought to be sown early. The soil should be in the best order it can be put,—deeply tilled, and well manured, and the rows placed two feet apart, so that they may be worked by horse-power. This distance is about as small as will do for field culture. The plants cover the soil well, and as large crops are gained as when the rows are closer. Parsnips may be sown in rows equally distant, but the seed should not be so deeply placed, nor should the sowing be done before the soil is warm and dry. Rows of Carrots may be placed a little nearer together—about twenty inches apart is best on most soils—though, in the garden, they are often 16 to 18 inches apart.

Potatoes.—There should be little delay now in planting the whole of the crop. On poor land, we think animal manure is quite as likely to prevent as to cause the rot; though in very rich soils, no doubt, it renders the plant more liable to take the disease. There is little risk of potato sets rotting now, if cut even to single eyes. Manuring in the hill with ashes and plaster is good practice, but this dressing is probably equally effective, if placed upon the hill at the first or second hoeing. Among the concentrated fertilizers in market, a good superphosphate is probably the best application for

potatoes. Guano is rather stimulating, but, like castor pomace, which is very good for this crop, must be mixed with earth in the drill.

Flax and Hemp.—Flax is occasionally sown in May, but it is too late for assured success. See that the weeding is thoroughly done before the shoots start up. Hemp may be sown any time this month, but the earlier the better. Sow in drills, on clean laud. A bushel to a bushel and a half to the aero of land is recommended for broadcast sowing. Less than half the quantity is required when drilled. Weeds, especially grass, are injurious, and may be fatal to the crop when quite young.

Broom-corn should be planted before Indian corn. Use a liberal quantity of seed, and thin it out after the wire-worms have done their work. It needs similar soil and culture to corn. See p. 126, (April).

Corn.—The corn crops of the country would be greatly improved if farmers would take more pains to plant early varieties, and make a careful selection of the earliest ripening ears for seed; but early or late kinds should not be planted before the seed will come up and grow. If we have cold weather, as we usually do have in May, corn struggles with weeds, and exists, between life and death, a prey to cut-worms and grubs, until hot weather. We find it much more satisfactory to wait until we are pretty sure of having warm, if not hot, weather within a week or ten days; then the growth is rapid and healthy from the start. Corn cannot be put on too rich ground, but it must not be planted too thick.

Peas may be sown broadcast, or in drills. The Canada Creeper is recommended, and three bushels per acre is an abundance of this kind. Larger sorts require more seed. Peas do well on a fresh clover sod. Peas and oats sown together—two bushels of each per acre—make good sheep or hog fodder.

Tobacco.—The seed-beds may need watering with liquid manure towards the end of the month. See that they are weeded thoroughly, and thinned.

Hops.—See book-list for pamphlet on hop culture, which contains full directions for management.

Soiling Crops.—In this climate there is no summer-soiling crop equal to corn. If the ground is very highly enriched, it may be sown early this month, but otherwise sow when the main crop is in, or about the same time. Drill it in two and a half feet apart, sowing any large, sweet variety. Stowell's Evergreen is good. Oats and peas sown now may be cut before the corn, and fed green.

Weeds.—Early and late, let the warfare go on. Weeds in the seed-leaf may be swept off, thousands at a blow, or push of the push-hoe. Stirring of the ground kills multitudes, and lays it open for a fresh lot of seeds to start. In using the push or common hoe to kill weeds, walk backwards, so as not to step upon the loosened soil, for this will re-plant weeds, which would otherwise be killed.

Cows pine for fresh grass, and they may be turned into swampy land or bog meadows when the bog grass springs green and tender. This is the only time of the year when they will eat it. Cattle must not go upon the summer pastures too early, for they will do great damage to the crop of feed. Manure, if possible, to make the roots last until the pastures are fit to turn the cattle upon.

Sheep.—Keep them off the pastures until there is a good stock of grass. Mow off the brush, if this has not been previously done. The sheep will keep down the young growth, and kill the bushes. Shearing may take place before the settled warm weather of June, provided the naked animals can have warm, sheltered sheds, and good feed until accustomed to the change. If the fleece is to be washed on the sheep, by all means delay shearing until warm weather. If wool be tub-washed, or if sheep be washed in tanks, from which the water may be drawn off and distributed over the land, much valuable manure may be saved. From an ordinary flock of merinos, we presume the value of the washings would not be less than six cents each on an average, and nothing could be better for grass.

Tools and Implements.—Every year gives us important additions to our labor-saving implements; and the necessity of buying the best whenever a

purchase is made is much greater than it was when the tools were chiefly made by the village blacksmith. Country store-keepers are allowed too much to decide what shovels, forks, hoes, and even mowing machines and hay-cutters, the people about them shall use. In hay-cutters the difference in labor between different kinds is fully fifty per cent; in dung forks the difference in durability is greater than that; and in the heavier implements and machinery, great differences also exist. It is for every farmer's interest to keep the store-keeper well posted, for, as a rule, the manufacturers pay just about the same commission, and the seller would as lief deal in one article as in another.

Work in the Horticultural Departments.

May brings with it abundant work in every department, but it also brings pleasures that belong to no other month. There is a charm about the early flowers, the swelling buds, and the tender shoots, that makes it a month of delight as well as of toil. In a backward season, much of the work set down for April will "linger in the lap of May."

Orchard and Nursery.

Planting.—If the trees have been heeled in and shaded, the work of planting may continue, as may

Grafting, but when growth has started, the bark separates very easily, and if care be not exercised, ugly wounds may be made. In sawing off a limb at this time, cut completely around the bark before sawing it off. Cover all wounds with grafting wax. For some unusual kinds of grafting, see page 178.

Young trees should have the soil kept clean and mellow about them from the start. Root crops, which are well manured, and require thorough cultivation, may be grown between the rows.

Mulch around young trees before the dry weather comes on. Bog hay, or, near the coast, salt hay, is generally the most available. If a mulch is not applied, keep the soil mellow by frequent stirring.

Nursery Trees.—Look to those budded last summer, and rub off all shoots that start from the stock before they get large enough to require cutting.

Seed-beds, of even hardy forest trees, will do all the better for shading, and some of them absolutely require it. A slat-work of laths, with the spaces between the laths as wide as the laths themselves, makes one of the best shades. Evergreen boughs put upon a rough support will answer.

Insects.—If any tent-caterpillars' eggs have been left, the little webs will soon manifest themselves. They are most readily seen when the dew is on them in the morning. They are easily destroyed by the hand, with a corn cob, or by use of a swab, with lye. Destroy them at any rate. Borers are to be cut out. Where there is a depression in the bark, the knife will usually reveal a borer. Often a wire will be needed to follow the fellow home. Try the plum and peach trees with a sudden jar, to see if the encephalo has commenced its work. As soon as it begins, the work of daily jarring the trees must be inaugurated. Catch and kill.

Fruit Garden.

Grape Vines.—Those grown with horizontal arms will need to have the ends of the arms bent downwards, to cause all the buds to start equally. With vines planted this spring, allow but one bud, which should be the strongest, to grow. Two buds may grow from vines planted last year.

Layers may be made by bending down a cane of last year's growth, placing it in a trench six inches deep, and fastening it there by means of hooked pins. When the buds have started, and the shoots have made a few inches' growth, gradually fill the trench with soil.

Currant Bushes.—The currant worm appears this month and next. No better application has been suggested than dusting with the powder of White Hellebore. Keep the ground well cultivated, or put a heavy mulch between the rows.

Strawberries.—Where the winter mulch still remains on, it should be parted over the plants if

not already done. Set plants, and if they show any blossom buds, remove them. Beds without mulch should have the surface thoroughly cleaned, without moving the soil so as to disturb the roots; then put on a thick mulch of bog or salt hay, straw, tan-bark, or whatever is most convenient.

Picking and Marketing.—Procure baskets and crates in good season, and have them distinctly marked. Hints are given in an article on page 163.

Insects.—Hand-picking is the only remedy for rose-bugs, as it is for the leaf-rolling caterpillars.

Flower Garden and Lawn.

Lawns.—Thin spots may be re-seeded; where small depressions in the surface appear, remove the sod, fill in with good soil, replace the turf, and pound it down firmly. A lawn mower is a necessity where there is much turf. Excellent hand-mowers are now to be had. With these the grass can be cut when two inches high, and the clippings left to act as a mulch and fertilizer. With the scythe, the grass must be four inches high to cut readily, and the crop must be removed.

Margins, where the lawn borders upon walks or beds, should be kept true with the edging knife.

Beds in Lawns are often introduced with good effect. Some of these are very elaborate, but it must be recollected that the more elaborate the plan, the greater the labor of keeping the design



in perfect condition. Choose curved figures rather than angular ones. Ovals, circles, and crescents, are to be preferred to squares, triangles, and stars. These may be filled with plants of colored foliage, such as Coleus, Achyrantes, Centaurea, variegated Geraniums, etc.; or with Verbenas, Scarlet and other Geraniums, Lobelias, etc.; or Cannas, Calceolarias (*Caladium*), and the like, may form taller groups in proper situations. Messrs. Olm Brothers, of Springfield, Mass., send us a design for a chain-like bed near a walk. The design is to be cut in the turf, according to the outer lines; the inner lines indicate the division of the plants used in filling, which may be such as the taste may dictate. Only those who have greenhouses where they can propagate a large stock of bedding plants, or who can afford to buy them, will be likely to do much of this "ribbon" planting. But a very good effect may be produced with annuals, though it can only be achieved later in the season. The various sorts of Phlox Drummondii will give several colors; *Tagetes signata* pumila is one of the best yellows; Sweet Alyssum a white; and so on. When a design is cut in the turf, pegs an inch square and a foot long should be driven at such points as will aid in preserving the outline when the turf is trimmed. These should be driven below the level of the grass, and be out of sight.

Evergreens are generally planted with success this month. It must be recollected that the roots of an Evergreen, if once dried, can never be restored. Young plants of Arbor Vitae and Hemlock, from the woods, may be bought for a few cents each; these should not be put at once into hedges, but set out in nursery rows, where they can be naturally or artificially shaded, and allowed to remain for a year. In this way but few will be lost, and those which survive may be safely planted in the hedge-row. In planting those evergreens that are to develop into trees, the very common mistake is made of setting them too close. An Austrian or White Pine should have at least twenty feet, and better thirty feet, in which to spread.

Bulbs.—Lilies may generally be had sufficiently dormant to plant. Gladioluses, Jacobean Lilies,

Tigridias, and other spring bulbs, may be set as soon as frosts are over.

Tuberose.—The bulbs should be potted or set in boxes of earth, and placed in a green-house or warm room. They will be sufficiently started to set out in three or four weeks.

Dahlias may be started in boxes of earth in a warm room, green-house, or a spent hot-bed. Divide the roots, leaving a bud to each.

Roses.—See article on page 163.

Transplant annuals that have been started in the hot-bed or window boxes when the weather will allow, leaving the tender kinds until the last.

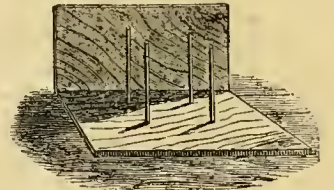
Bedding Plants.—These having been raised under glass must not be put in the open border until cold storms and chilly nights are over.

Kitchen Garden.

In last month's notes there was given a list of all the hardy vegetables in general cultivation, with brief hints as to the manner of sowing them. It is not necessary to enumerate these again, and we include here only the tender vegetables which, in the neighborhood of New York, can rarely be sown with safety before the middle of May. In localities colder than the one referred to, the sowings indicated for April will be made this month.

Succession Crops.—The season of vegetables may be prolonged by sowing crops at intervals of a week or ten days. This may be done with radishes, lettuce, and other salad plants, peas, corn, etc.

Asparagus.—Cut with a sharp knife. When it is to be marketed, it must be bunched. The engraving shows a simple bunching frame. The bottom is ten inches wide and twelve inches long; the back, six by twelve inches, is nailed to it; four sticks, six inches long, are inserted in the bottom, four inches apart each way, beginning two inches from the back. Lay a string upon the



board, within the sticks, and place the asparagus, previously washed, between the sticks, with the heads against the back board. When sufficient is placed in to form a bunch, tie the string, and cut the but ends of the asparagus even. Place another string near the top. Bass mat furnishes the best strings. The usual size of the bunch is nine inches long, and four to five inches in diameter. The bundles should always be set erect to keep them straight, and when packed in boxes for market, fresh cut grass should be used below and between them.

Beans.—Continue to plant bush sorts. Limas are very sensitive to cold and wet, and the ground should be both warm and dry. Set the poles, which should be six or eight feet high, four feet apart each way. The hills should be manured if the ground is not already rich. Plant five or six beans around each pole, pressing them into the soil, eye down, and covering an inch. If plants of the Lima have been started under glass, put them out as soon as the weather is warm. The Wax bean is an excellent pole variety to use as snaps.

Beets and Carrots.—Weeding and thinning are to be done as soon as the plants are large enough to work. A slight supremacy of the weeds is very injurious to the carrot.

Cabbages and Cauliflower.—Keep the early set crop well hoed. A hoe-fork will be found useful. Sow seeds of the later sorts in well-prepared seed-beds in the open ground. See article on page 180.

Celery.—Sow seeds in seed-bed. The dwarf-growing kinds are preferable.

Corn.—Plant as soon as it is safe to do so. The Early Dwarf Sugar has small ears, but is sweet and early. See catalogues for other varieties.

Cucumbers.—Sow seed in frames from which lettuce has been removed, and in hills in the open air when it is warm enough; put in a plenty of seed,

to allow some for the hngs. Put out plants that have been started on sod under glase as soon as it is safe. Have some kind of a shelter to put over at night.

Egg Plants are among the most sensitive of garden plants, and must not go out until cold nights are over. Pot the plants if it is not already done.

Herbs.—Sow in seed-bed. Sage, Thyme, Sweet-Marjoram, and Summer Savory are most in use; Basil, Tarragon, and some others, are fancied by few.

Lettuce.—Transplant as soon as large enough; set a foot apart each way. Sow seed for succession.

Martynia.—The green and tender pods are used for pickles. Set the plants two feet apart each way.

Melons.—Plant the same as directed for cucumbers.

Onions.—In some localities sowing may still be done. Weed early. See article on page 127, April.

Parsley.—Sow in seed-beds early; it is very slow.

Parsnips.—Weed and thin to ten or twelve inches apart as soon as the plants are large enough.

Potatoes.—Use the cultivator or hoe as soon as they break ground. In most soils, a dressing of ashes and plaster will be found of great service.

Peas.—Brush the varieties that need it before they are large enough to fall down. In hoeing draw the earth towards them. Plant for a late crop.

Peppers are treated much the same as Egg Plants.

Rhubarb.—Do not pull from the plants set this spring. In removing leaves from established plants, never cut them. They readily come off if given a slight sidewise jerk, which is soon learned.

Spinach.—Sow; thin and weed that already up.

Sweet Potatoes.—Prepare the ridges, and have them ready for the plants, which must not be set until cold nights are over. Make the ridges thirty inches apart at the top, and well manured; set the plants every fifteen inches. Insert the plants down to the first leaf, press the soil firmly; if the earth is not moist, pour water into the holes in planting.

Squashes.—Observe the same precautions as with cucumbers. Put the bush sorts three to four feet apart each way. The Summer Crookneck is the best, but the scalloped varieties the most salable. For late varieties, the Boston Marrow and Hubbard are best. Gregory advises more room for the vines than is usually given, and we think he is right. Eight feet each way for the Marrow, and nine or ten feet for the Hubbard, is better than less. Make the soil rich all over, as the vines root at the joints.

Tomatoes.—Put out the plants when safe to do so, three or four feet apart, according to the variety. In gardens, some kind of a trellis or support for the vines adds to neatness, and improves the fruit.

Winter Cherry (Physalis).—The fruit of this is prized by many for sweetmeats, as well as to eat raw. Sow and cultivate the same as tomatoes.

Green-house and Window Plants.

There is no set time for bringing out plants; it must be governed by the season, and the nature and condition of the plant. So many plants have been injured by injudicious sudden change, in removal to the open ground, that some of our best cultivators prefer to leave them in-doors altogether.

Plunging plants means bedding the pot in the soil of the border without removing the plant. When this is done, a flat stone, coal ashes, or other matter, should be put at the bottom of the excavation, to prevent worms from finding their way through the hole in the pot into the ball of earth.

Turning out means that the ball of earth is to be removed from the pot, and planted in the border. Many things that are turned out to fill up the borders are not taken up again, but a new and much more vigorous stock is propagated from cuttings.

Camellias, and other broad-leaved evergreens, should be placed under a lattice work where they will be shaded during the heat of the day.

Window Plants which are neither plunged nor turned out in the border need shelter from the sun, plenty of water, and care in respect to insects.

Ivy that has been kept in-doors may be set in a shady place, or the plants may be turned out. Do not allow the branches to lie upon the ground.

AMERICAN AGRICULTURIST.

ORANGE JUDD & Co., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies; Four to nine copies, \$1.25 each; Ten to nineteen copies, \$1.00 each; Twenty copies and upwards, \$1 each. Papers are addressed to each name.

LARGE PAY

for a little work is very agreeable. We have heard of only one man lately who positively refused to receive it when directly offered. (The Mayor of Portland, Me., wants his salary reduced!) But many thousands are letting an opportunity to get such large pay pass by unimproved. No one can look through the table in next column, without finding many good things—things that are worth far more than the selling value set against them. There is not an article mentioned, which it would not pay well to purchase with money, if it could possibly be raised. But we put it in the power of those who cannot spare the money, to secure one or more desired articles without cost. Many thousands have done so recently, and many other thousands can yet do the same thing

DURING MAY.

A few odd hours—spent in collecting a small number of names—will secure an article worth many dollars. Last May a widow lady decided to try for a piano, and by the middle of June she brought us the last names to make up 540, and took home a splendid Steinway Piano, which she could have sold for \$600 cash. Many others took lesser premiums. One lady first got a beautiful Tea Set for herself, and then earned another for a friend. Sewing Machines, Wringers, Washing Machines, first-class Watches, etc., etc., were taken in great numbers. It can quite as easily be done

THIS MAY

by thousands of those who have premium clubs partly filled already, and by any number of others who will start new premium clubs. There are very few Post-offices where there are not still people enough to make up a premium club—persons, too, who would be greatly benefited as well as pleased by having this journal earnestly brought to their attention. The five beautiful and valuable numbers of this volume now issued are to be followed by seven others—as much better as it is possible to make them. Will anybody fail to get back the value of his subscription money, many fold?

READER,

here is a chance for you. Try your hand at getting a small club, at first, for some one of the premiums of moderate value, even if it be one of the smallest ones in the table. You will be quite likely afterwards to make it larger before sending for the premium; and if you do not, the few names secured, and the experience gained, will open the way for a splendid premium club next season.

Our experience last summer, and previously, assures us that if enterprising persons take hold of canvassing for subscribers now—and persist in the work until they learn how to canvass well—by securing our premiums and selling them, the following sums can be earned this summer: [Women can do quite as well as Men]

- 1000 Persons can Earn \$1000 each.
1000 Persons can Earn \$600 each.
1000 Persons can Earn \$500 each.
1000 Persons can Earn \$400 each.
1000 Persons can Earn \$300 each.
1000 Persons can Earn \$200 each.
1000 Persons can Earn \$100 each.

[In this table are given the regular cash prices of each article, and the number of subscribers required at \$1.50 a year, to get it free, also at the lowest club rate of \$1 a year. For full descriptions of the articles see extra sheets, sent free.]

Table of Premiums and Terms, For Volume 28—(1869). Open to all—No Competition.

Table with columns: No., Names of Premium Articles, Price of Premium, Number of subscribers required at \$1.50, and at \$1.00. Includes items like Alderney Bull, Crowsour Fowls, Brakmas Light, etc.

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-two Premiums, Nos. 29, 30, 31, 61, 62, 63, 64, and 76 to 100 inclusive, will each be delivered FREE of all charges, by mail or express, (at the Post-office or express office nearest recipient), to any place in the United States or Territories. —The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance specified.

Read and carefully Note the following: (a) Get subscribers anywhere; all sent by one person count together, though from one or a dozen different Post-offices. (b) Say with each name, or list of names sent, that it is for a premium list, and we will so record it. (c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. Any time, from now to June 30th, will be allowed to fill up your list as large as you may desire. The premium will be paid whenever you call for it. (d) Send the exact money with each list of names, so that there may be no confusion of money accounts. (e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer the premiums. (f) Specimen Numbers,

Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, for every extra copy of the paper costs, with the 2c. prepaid postage, about 12 cents....(g) Remit money in Checks on New York Banks or Bankers payable to order of Orange Judd & Co., or send Post-Office Money Orders. If neither of these is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

If from any Cause one fails to get the larger premium desired, the names can be used for a smaller one.

A Full Description of the Premiums is given on an extra sheet; a copy will be sent free to every one desiring it. For New Premium 106, see page 32, January No. We have only room here for the following:

No. 42—Clothes-Wringing Machine. A very useful, time-saving, strength-saving, clothes-saving implement, that should be in every family. The wringing of clothes by hand is hard upon the hands, arms, and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the garments.

No. 72. — Crandall's Improved Building Blocks furnish a most attractive amusement for children. Churches, Dwellings, Barns, Mills, Fences, Furniture, etc., in almost endless variety, can be built with them, and the structures remain so firm as to be carried about. The Blocks are put up in neat boxes, and with each box is a card giving many designs of buildings.

Nos. 76 to 81—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the sixteenth to the Twenty-seventh Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are put up in clean numbers, with full Index to each volume.—They are profusely illustrated, the Engravings used in them having alone cost about \$40,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from 16 to 27.

Nos. 82 to 87—Bound Volumes of Agriculturist.—These are the same as Nos. 76 to 81 above, but are neatly bound in uniform style, and cost us more for the binding and postage. Sent post-paid.

Nos. 88 to 99—GOOD LIBRARIES.—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any of the premiums 88 to 99 may select any books desired from the list on page 191, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post-Office, or Express office, as we may find it most convenient to send them.

No. 100—General Book Premium: Any one not desiring the specific Book premiums, 88 to 99, may select Books from list on page 191, to the amount of 10 cents' worth for each subscriber sent at \$1; or 30 cents for each name sent at the (ten) club price of \$1.20 each; or 60 cents' worth for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

A Few Dollars' worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to make their heads help their hands. A good book will, in the end, be of far more value to a youth than to have an extra acre of land on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres than he would off from 50 acres without the mental ability which reading will give him. Far better to sell the acre of land, than do without the books. Several good books are announced in the Advertising columns, and in the list on page 191.

No. 106—Pocket Rifle.—(Breech Loading).—A full description of this beautiful implement, with illustrations, was given on page 32, of Jan. No. No one who enjoys shooting, or who has occasion to carry a light but effective weapon in traveling or while at work, will regret the trouble required to gather the 24 (or 18) subscribers required to secure this weapon free. If any one does not care for the mahogany case, we will present the weapon all complete, with extension breech and 100 cartridges, all packed in a strong pasteboard box, neatly papered, on receipt of 18 subscribers for 1869 at \$1.50 each.

SPECIAL OFFER

For the Month of May.

A Beautiful Book,

Valuable to Everybody;

Sold for only Half a Dollar,

(and sent Post-paid);

Well Worth a Whole Dollar.

It is also

Presented and sent Post-paid,

For only a Few Minutes' Work!

200,000 Readers will Please N. B.

The Offer is to Each one of You!

Our Agricultural Annual No. 3, for 1869, and our Horticultural Annual No. 3, for 1869, are among the most valuable and beautiful volumes issued in this country during the present year. They are packed full of good information, and each volume contains a large number of beautiful engravings. They are worthy a place in every family, in city, village, and country. They are universally admitted to be the cheapest volumes issued. They are original, the matter and engravings being all prepared exclusively for these volumes by a large number of first class practical writers. As these books are a permanent Annual Institution, and as we have made the volumes for 1869 decidedly superior to those of 1868 and 1867, (though those were good as first attempts,) we want everybody to have a copy, for all who get them this year will be sure to want the numbers for 1870 and thereafter. We therefore invite everybody who has not done so already, to send only 50 cents, and secure a post-paid copy of either the Agricultural Annual No. 3, or the Horticultural Annual No. 3, or send \$1 and get both of these volumes. They are entirely different.

But we will do even better, when desired, viz.: To any person sending during the month of May a subscriber to the American Agriculturist for 1869 at the regular price (\$1.50), we will present a copy of either of the above-named Annuals that may be desired, and we will send it post-paid to any point in the United States or Territories....A few minutes' work or talking will enable any person to secure a subscriber to the Agriculturist (as valuable as we are now making the paper), and then the Annual will be obtained free.

N. B.—One Annual is offered for each subscriber sent at \$1.50. The sender can choose any one of the six Annuals already issued, viz.: Agricultural No. 3 for 1869, or No. 1 for 1868, or No. 1 for 1867; or Horticultural No. 3 for 1869, or No. 2 for 1868, or No. 1 for 1867. One, two, three, four, or more subscribers will secure an equal number of Annuals, of any issue desired....N. B.—These premium Annuals are special, and are not included in the general premiums, which are separate, but are continued, as noted elsewhere.

Commercial Matters—Market Prices.

Gold has been variable during the month, selling up to 133%, but closing weak at 132%. There has been only a moderate trade in Breadstuffs during a month past. The export inquiry has been light and chiefly for low grades of flour, No. 2 spring wheat, and new mixed corn, which have been generally in good supply and depressed in price. The home demand for flour and grain has been confined to the supply of pressing wants as a rule, though there has been an occasional call from buyers on speculative account. Purchasers will not operate very confidently, until the resumption of navigation shall have enabled forwarders at the interior to place fresh stock in the seaboard markets....There has been a diminished business in most kinds of Provisions, and prices have tended downward, on increasing offerings, particularly of Pork and Beef....Wool has been slow of sale, all through the month, and prices close less firmly with a downward tendency. Manufacturers are not purchasing much at present, as they are looking for lower values.... Cotton has been comparatively steady, and in fair request.Hops have been in request at previous figures.... There has not been much call for Hay, Rice, or Seeds, prices of which have been rather depressed.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for the month ending April 14, 1869, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW-YORK MARKETS. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 26 days this m'th, 146,000 779,000 497,000 8,800 36,500 101,000 23 days last m'th, 114,500 519,000 357,000 8,100 25,000 187,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats. 26 days this m'th, 201,000 1,157,000 1,203,000 74,000 144,000 994,500 23 days last m'th, 194,000 1,393,000 1,274,000 35,700 175,000 1,115,000

2. Comparison with same period at this time last year. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 26 days 1868, 146,000 779,000 497,000 8,800 36,500 101,000 26 days 1869, 118,000 292,500 913,000 65,500 153,000 73,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats. 26 days 1869, 201,000 1,157,000 1,203,000 74,000 144,000 994,500 26 days 1868, 204,000 741,000 1,422,000 142,500 68,000 1,177,000

3. Exports from New York, Jan. 1 to April 10: Flour, Wheat, Corn, Rye, Barley, Oats. 1869, 252,219 2,144,724 788,278 148,822 24,407 54,934 1868, 205,245 815,889 2,393,946 148,822 24,407 54,934

4. Stock of grain in store at New York: Wheat, Corn, Rye, Barley, Oats, Mill. 1869. Apr. 10, 1,684,633 1,680,709 163,068 48,281 1,178,710 66,664 March 12, 1,990,416 1,391,167 211,830 81,616 2,000,457 50,095 Feb. 10, 3,708,609 1,407,646 325,183 91,284 2,380,529 58,034 Jan. 13, 3,534,172 1,509,353 263,260 54,740 2,564,354 286,001 1868. Dec. 14, 3,475,544 2,005,819 287,101 342,921 8,044,591 99,586 Nov. 10, 1,821,057 2,773,809 123,248 371,055 2,082,708 23,691 Oct. 12, 483,266 2,508,744 81,825 22,026 1,338,936 59,651 Sept. 9, 246,549 2,143,590 16,990 256,437 97,094 Aug. 11, 585,370 1,611,468 575 489,100 92,995 July 13, 592,919 1,466,412 28,807 575 780,825 57,138 June 10, 1,576,797 1,836,171 51,490 575 537,364 11,565 May 13, 374,342 1,039,621 33,344 403,481 8,705 Apr. 13, 656,630 1,228,259 8,376 13,353 891,199

CURRENT WHOLESALE PRICES. March 15, April 14. PRICE OF GOLD. 131 132 1/2 FLOUR—Super to Extra State \$5 40 @ 7 1/2 5 55 @ 7 1/2 Super to Extra Southern... 6 80 @ 13 00 6 40 @ 13 00 Extra Western... 5 90 @ 12 25 6 00 @ 12 50 Extra Genesee... 7 15 @ 10 00 7 20 @ 10 00 Superfine Western... 5 40 @ 6 00 5 50 @ 6 00 RYE FLOUR... 5 00 @ 7 00 4 85 @ 7 00 CORN MEAL... 4 00 @ 5 10 4 25 @ 4 75 WHEAT—All kinds of White. 1 70 @ 2 05 1 60 @ 2 25 All kinds of Red and Amber. 1 35 @ 1 75 1 35 @ 1 75 CORN—Yellow... 94 @ 98 89 @ 93 Mixed... 92 @ 1 00 86 1/2 @ 91 1/2 OATS—Western... 7 1/2 @ 7 0 1/2 State... 6 @ 6 1/2 RYE... 1 40 @ — 1 25 @ 1 40 BARLEY... 2 00 @ 2 25 1 80 @ 2 15 HAY—Bale #100 lb... 70 @ 1 25 55 @ 1 25 STRAW, #100 lb... 85 @ 1 15 75 @ 1 15 COTTON—Middle, #8... 28 1/2 @ 28 1/2 28 1/2 @ 29 1/2 HOPS—Crop of 1868, #10... 5 @ 12 5 @ 12 FEATHERS—Live Geese, #10... 75 @ 85 77 1/2 @ 85 SEED—Clover, #10... 14 1/2 @ 15 1/2 14 1/2 @ 15 1/2 Timothy, #1 bushel... 3 50 @ 3 75 3 45 @ 3 65 Flax, #1 bushel... 2 65 @ 2 80 2 70 @ 2 85 SUGAR—Brown, #10... 11 1/2 @ 14 1/2 11 1/2 @ 13 1/2 MOLASSES, Cuba, #1 gal... 8 @ 6 85 @ 6 COFFEE—Rio, (Gold, in bond) 9 @ 13 9 @ 13 TOBACCO, Kentucky, &c., #10... 6 @ 18 6 @ 16 Seed Leaf, #10... 8 @ 75 7 1/2 @ 75 WOOL—Domestic Fleec, #10... 46 @ 60 45 @ 60 Domestic, pulled, #10... 35 @ 50 35 @ 40 California, unwashed... 20 @ 37 20 @ 37 TALLOW... 11 1/2 @ 11 1/2 11 1/2 @ 11 1/2 OIL—Carp... 40 @ 50 40 @ 50 47 @ 50 00 Pork—Mess, #1 barrel... 31 00 @ 31 50 30 50 @ 30 75 Prime, #1 barrel... 26 00 @ 27 25 26 50 @ 27 25 BEEF—Plain mess... 8 00 @ 16 00 8 00 @ 16 00 LARD, in tins & barrels, #10... 17 1/2 @ 19 1/2 17 1/2 @ 18 1/2 BUTTER—Western, #10... 20 @ 37 20 @ 37 State, #10... 42 @ 55 40 @ 50 CHEESE... 10 @ 23 10 @ 22 1/2 BEANS—#1 bushel... 2 90 @ 4 00 2 40 @ 3 30 PRAS—Canada, in bond, #1 bu... 1 40 @ 1 45 1 25 @ — EGGS—Fresh, #1 dozen... 23 @ 26 25 @ 28 POULTRY—Fowls, #10... 16 @ 22 20 @ 25 TURKEYS, #10... 1 50 @ 3 00 1 50 @ 3 00 Apples—#1 barrel... 3 50 @ 6 50 3 50 @ 7 50 SWEET POTATOES, #1 bbl... 5 50 @ 6 50 5 50 @ 6 50 CRANBERRIES, #1 barrel... 13 00 @ 16 00 — @ — TURNIPS—#1 bbl... 1 50 @ 1 75 1 50 @ 1 75 CABBAGES—#100... 9 00 @ 18 00 9 00 @ 18 00 ONIONS—#100... 6 00 @ 8 00 6 00 @ 8 00

New York Live Stock Markets.—

WEEK ENDING.	Beeves.	Cows.	Calves.	Sheep.	Swine.	ToCl.
March 22d.....	5,187	79	972	21,162	12,536	39,735
do. 29th.....	5,961	106	1,033	22,159	15,289	44,563
April 5th.....	4,708	80	731	19,570	14,484	39,513
do. 12th.....	7,482	71	1,312	22,756	18,361	49,985
Total in 4 Weeks.....	23,558	379	4,038	85,597	60,470	173,812
do. for prev. 4 Weeks 20,955	366	2,824	87,955	43,726	155,245	
Beeves. Cows. Calves. Sheep. Swine.						
Average per Week.....	5,889	84	1,009	21,399	15,117	
do. do. last Month.....	5,246	94	706	21,984	10,181	
do. do. prev's Month.....	5,545	84	535	21,844	8,059	
Average per Week.						
do. do. 1867.....	5,733	105	1,588	27,182	18,809	
do. do. 1867.....	5,544	64	1,329	22,154	20,605	
do. do. 1866.....	5,748	94	1,200	20,000	13,000	
do. do. 1865.....	5,255	118	1,500	16,091	11,023	
do. do. 1864.....	5,191	115	1,511	15,915	12,076	
Total in 1868.....	298,123	5,496	82,571	1,418,479	978,061	
Total in 1867.....	293,882	8,369	69,941	1,174,151	1,102,643	
Total in 1866.....	268,880	4,885	62,420	1,040,000	672,000	
Total in 1865.....	270,271	6,161	77,991	836,733	573,190	
Total in 1864.....	267,609	7,603	75,621	782,462	690,277	

The weekly arrivals of beef cattle have been rather light for the increased demand after Lent, and the market has been brisk. There was a wide range in quality, and none really first class were for sale. The average quality was only what would be called medium. This estimate does not include some few droves of really poor steers of the "scallawag" order. The very best "tops" of good droves brought 17½c. per pound, net weight, while the majority of good steers sold for 17c. The weather has been unsettled, and rainy market days are always bad for owners. Those who were fortunate enough to be on paved yards got along pretty well, but those off the stones complained of mud and bad sales. Buyers have been more plenty for the two weeks ending April 12th, and competition quite lively. This state of things always makes stock men feel in good spirits, whether their cattle are really fat or not. The cattle were most of them sold on market days, and but little "peddling" was done. The following list gives the range of prices, average prices, and figures at which the largest lots were sold: Mar. 22d ranged 12 @ 17½c. Av. 15½c. Largest sales 15 @ 16½c. do. 29th do. 12 @ 17½c. do. 15½c. do. 14½ @ 16½c. Apr. 5th do. 13½ @ 17½c. do. 16c. do. 15 @ 16½c. do. 12th do. 11 @ 17c. do. 15½c. do. 14½ @ 16½c.

While 17½c. was the highest price paid this month for good beef, and the figures given vary but little from those for last month, still we think it safe to place the market at least ½c. higher for the same quality of cattle. Medium steers that last month sold for 15@15½c., this month brought 16c., and in some cases 16½c. per pound, net weight. **Milch Cows.**—The demand for cows has not been great and the market has been a dull one. There has been a little increase in numbers, and sellers had to drop a few dollars per head for common cows. The highest prices paid this spring for milch cows were for two Ayrshires, which brought \$400. Very good cows sell for \$80. Prices range from \$60@90, with poor milkers and old ones at \$50, or even less. **Veal Calves** are not plenty enough to make a brisk trade, and there is but little change in prices. Live calves sell readily if they are good and not too young. Butchers do not like to buy "bob" calves, for fear of having them confiscated after they are hung up in the stalls. "Bobs" therefore sell slow at low prices by the head. Good live calves sell for 12c.@13c.; medium, 10c.@11c. "Hog-dressed," fat and fresh, sell all the way from 12c.@18c. per pound, according to quality. **Sheep.**—There are a great many shorn sheep now coming into market, and they sell for 1½c.@2c. per pound lower than those unshorn. The arrivals have been light and the market rather lively. Shorn sheep, if fat, sell readily. Prices range from 5½c.@7c. per pound for shorn, 7c.@9½c. for unshorn, according to quality. **Swine.**—The live hog market has been more active for the last month. Western dressed are less abundant, and not in so great demand. Prices have kept firm all the month and the market steady. Good hogs sell quickly for 10½c.@11c.; for a few very fat and extra good 11½c. was paid. Dressed hogs keep firm, at 13½c.@14c.

1,500,000 Readers!—A canvasser for a premium, in a Western State, just tells us that he found 103 families who regularly read the *American Agriculturist*, although his club numbered but 24 copies. By exchanging papers, and borrowing, these 24 copies reached all of the 103 families, which averaged 4¼ readers in each. (In one case 26 persons read the same copy regularly.) If the above were the case generally, there would be between three and four million readers of this journal. By cutting down the estimate more than half, we still have a million and a half of Readers—quite enough to stimulate the Editors to constant exertions and care.

Hints to Advertisers.—A business man at first objected to our terms, but readily offered to furnish a neatly printed card to put in every paper if we would slip them in for 25 cents per 1,000. He thought if one in a large number of these cards reached a customer, it would pay. A little calculation showed him that it would cost over \$600 to provide the cards alone, while our charges were only \$30 to print the same card in the paper, where it would be seen several times over, both by the sub-

scribers and their friends, and not be in danger of dropping out. A nurseryman kept a large force of men, and sold about \$25,000 worth of stock annually, which just about paid expenses. He then spent \$5,000 in advertising, and thus ran up his sales to about \$65,000, while the increased cost of the nursery was only \$15,000 per annum. Many business men keep up large establishments that pay very lightly. With no increased expense for rent, etc., they might quadruple their trade by making their business known. One man scattered his advertisements in little items here and there, and found it paid moderately well. As an experiment, he put in a large, striking advertisement, that cost him over \$1,000. It was of such size and display that it attracted general attention; he was run down with customers, and made a small fortune in a brief time.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be prepaid at the Post-office where the paper is received.

How to Remit:—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect Oct. 1, 1863, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the *Registry fee*, as well as postage, *must be paid in stamps* at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. *Buy and affix the stamps both for postage and registry, put in the money, and seal the letter in the presence of the postmaster, and take his receipt for it.* Letters thus sent to us are at our risk.

Bound Copies of Volume XXVII (1868) are now ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (16 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume, (50 cents extra if returned by mail.) Missing numbers supplied at 12c. each.

How to Study Insects.—The Guide to the Study of Insects, by Dr. A. S. Packard, Jr., supplies what has long been needed—a work which will enable one to study the structure and transformations of insects, and learn the principles upon which they are classified. The work is published in parts, at 50 cents each, and is very abundantly illustrated. It is sent by mail from the office of the *American Agriculturist* on receipt of price.

A Book for Young Farmers.—"Thomas' Farm Implements and Machinery."—The basis of this admirable work was an essay published in 1850, in the Transactions of the N. Y. State Agricultural Society, which was enlarged, and in 1854 published by the Harpers. It has been, and remains, the only work in which the principles of Natural Philosophy, namely, the mechanical powers, and the powers of water, wind, and heat, are systematically discussed as applied to the operations of the farm. There has been unlimited discussion of the principles and facts of Agricultural Chemistry and the general philosophy of farming, while the principles of mechanics, etc., most important for every farmer to know, have had little attention. This work has now been most carefully revised by the author. It is much enlarged, and a great part has been re-written, while the illustrations, before abundant, now number two hundred and eighty-seven. A large number of new implements are described, with the heavier farm machinery, and the use of steam, both in cooking and as power on the farm, is clearly discussed. The whole work is of a thoroughly practical character, and the application of the principles taught to the farmer's daily work makes its instructions of very great value. There is not an agricultural writer that could be named more respected than John J. Thomas,

or one whose judgment and freedom from personal bias in discussing new implements could be more impartially relied upon. It contains 292 pages, 12mo. Published by Orange Judd & Co. Price, \$1.50.

Moistening Chopped Hay for Horses.—This practice is becoming more and more general. It is undoubtedly very beneficial. For horses that have any tendency to heaves, it is indispensable. The advantage, however, is not due merely to the fact that cutting the hay and moistening it with water "lays the dust": it does more than this; it softens the hay and meal, and renders it more easily digested. This, in fact, is the main point. And this suggests the question whether we can not carry the system farther. Steaming would be best, but at this hurried season it is out of the question on most farms. But cannot some way of *soaking the hay* be adopted that will involve little labor, and which will make the hay more digestible, without washing out the soluble nutritious matter, or inducing fermentation? If nothing more was done than to mix the food for the next meal, say at morning for noon, at noon for night, and at night for next morning, the hay and meal would be softened materially, and would approximate nearer to fresh grass. We soak our dried apples before cooking them; why not our dried grass?

Parsons on the Rose.—By Samuel B. Parsons, Flushing, N. Y. New York: Orange Judd & Company. The Rose is the only flower that can be said to have a history. It is popular now and was so centuries ago. In his work upon the Rose, Mr. Parsons has gathered up the curious legends concerning the flower, and gives us an idea of the esteem in which it was held in former times. A simple garden classification has been adopted and the leading varieties under each class enumerated and briefly described. The chapters on multiplication, cultivation, and training, are very full, and the work is altogether the most complete of any before the public. In preparing this edition a large amount of new matter has been added and the whole has been thoroughly revised. Illustrated, \$1.50 by mail.

A Poultry Number.—The very general interest manifested in all parts of the country in regard to poultry warrants us in devoting a large share of space in this issue to the subject. The Great Exhibition described elsewhere has furnished one of the weekly papers an opportunity to bring out an English Engraving, which it offers as portraits of the fowls at the show. Another gives us caricatures of a Wood Duck and hen, etc. As we have already published full length engravings of the leading breeds, we here give the heads of several of those now attracting attention. They are drawn with great care from life, and will be found to present the peculiar markings which distinguish these breeds more distinctly than any illustrations have heretofore done. But few are aware of the difficulties attending the portraiture of these restless birds, and the artists as well as engravers are to be congratulated upon their success.

Sundry Humbugs.—The various swindling concerns, under the guise of "Mutual Benefit Associations," of this and other cities, seem to have nearly died out, or taken other disguises. An entirely new Insurance scheme, now before us, may be one of the old "mutual" concerns. This association purports to be connected with a weekly journal of this city, and is under the management of one J. S. Rigney. The association proposes to engage agents everywhere, and pay them by giving one-half they collect of persons who become members of the "Mutual Society." The membership fee for an adult man is \$2.00; for a man and his wife, \$3.00. Besides this "liberal offer" to agents, they throw in a few lottery tickets, these tickets to draw valuable prizes in jewelry, and "upon presentation, accompanied with \$2.20 to pay expenses," etc. The old story. The plan is too old to catch many, and we warn all against them. Remember, every dollar sent to such and similar concerns is lost money. If any person or persons in Brooklyn are doing business under the name of "Westcott's Express," and have not found out that they are the medium of a great deal of wicked and unlawful traffic, it is time they did. Williamsburgh has some bad men, and one particularly wicked one by the name of Turner. Mr. Turner seems to have every thing, including his letters, sent to care of Westcott's Express. Now we suggest to Messrs. Express Co. to pay particular attention to this Mr. T's orders, and for the good of their own name, order Mr. T. to find some other medium of communication, or quit swindling people with pretended "Gift Lotteries," and selling poisons and wicked publications. Kelley, the well-known "Kelley Lottery" man, who, some time last fall, was locked up by the Buffalo authorities, is at his old tricks again. This time we are informed it is "most positively the last notice." It is the

same old story. Gold watches and chains, valued at \$300 or more, and then comes the assessment, \$10, or \$15, etc., etc. Mr. K., your experience out West does not seem to have improved you much; it can't be you read the papers. Your old trick has been worn thread-bare during your absence. Try to think of something new. Better change your name to begin with.... We are again called upon to warn persons against using any form of cheap burning fluid or Kerosene. A circular with the very imposing heading, "Sunlight Oil," is before us. This stuff, we are told, is "non-explosive," and the "cheapest and best oil in the world," and it costs only 28 cents per gallon to make it. "Agents to sell family rights wanted in every town." No safe oil or burning fluid of any kind can be made for any such price, and any person foolish enough to use the stuff places his life and property in jeopardy.... The "Mt. Vista Gold and Silver Mining Co." turns up after some months of rest, with surplus stock to sell. Suffice it to say, no such company is to be found at the number given.... The "One Dollar Time-keeper" man seems to reside in Chicago at present. Look out for him. His handsome "time-keeper" is only a very poor sun-dial, which may be worth 10 cents.... Gumbidge, having succeeded in keeping out of jail, notwithstanding his arrest for circulating bad money, has, by his example, stimulated others to try their hand at counterfeiting. W. H. Dailey & Co., New York, have gone into the business. They make "Fac-similes of U. S. Treasury Notes" for sale, and also have a "Magic Comb," for dyeing the hair any color you wish. Both are equally worthless and wicked.... We have said enough about Oroide Watches to make people careful about purchasing such things by name simply. Some companies make very tolerable watches, while a large proportion of the so-called Oroide Watches are perfectly worthless.... We are glad to find that our new Mayor reads the *American Agriculturist*. He has issued an official proclamation (given below) which contains what we have constantly proclaimed these many years past. We bid Mayor Hall good speed, and will be glad to second his efforts in this line vigorously.

MAYOR'S OFFICE, NEW YORK, March 27, 1869.

To the Press of the United States:

I beg to caution strangers against New York circulars, tickets, shares, chances and prospectuses in cooperative unions, or gift enterprises, or dollar stores, or in any other possible scheme whereby property or value is promised greater than the price asked to be paid.—Every such an advertised scheme is necessarily a swindle and a false pretence: there does not and cannot tangibly exist any such schemes in this City.—Country newspapers which advertise them simply aid in the swindle.—If all newspapers in the Union would now make a point of publishing and reiterating this information, they will charitably, and, I think, effectually, counteract the swindling intentions of those who use the mails for the false pretences, and will also save to the unwary hundreds of thousands of dollars.—A. OAKLEY HALL, Mayor of the City of New York.

"Orange Judd Prize Wheat."—Several parties offer wheat with Mr. Judd's name attached. While there is no impropriety in those who took the Orange Judd Prizes making known the fact that their wheat, of a certain variety, took the premium, no one has a right, on this account, to re-name old and well-known varieties, as all those were to which the prizes were awarded. Mr. J. Knight, Ottawa Co., Kansas, writes, that he "saw the 'Orange Judd Prize White Spring Wheat' offered by a party in Hartford, Conn., as a 'celebrated novelty.' Believing that whatever had your endorsement so emphatically must be superior, I was induced to send for a quart of the wheat. I have received a package of amber wheat, badly mixed with common black oats." Mr. Judd has never "endorsed" any wheat "emphatically" or otherwise, he has never seen any of the wheat which took the prizes, nor is his name used by his authority. Mr. Judd offered prizes for wheat, and placed them at the disposal of the N. Y. State Society. An award was made which satisfied no one but those who took the prizes. He probably has not thought of the matter since.—Eds.

The Market Assistant.—This is the title of a work by Col. Thos. F. De Voe, author of the Market Book, and numerous valuable historical papers, a practical butcher, who spends the first half of every working day at his stall in Jefferson Market, and is, and from childhood has been, thoroughly familiar with the subject on which he writes. The book contains "a brief description of every article of human food sold in the public markets of New York, Boston, and Philadelphia;" it tells the best ways to market, the best pieces to buy, how meat should be cut up; how to tell inferior qualities of meat, fish, vegetables, etc.; the seasons when certain fish, shell-fish, game, etc., are best; and in many other ways gives practical information, useful to every one who has a family to provide for, or who has animals to kill and dress for home consumption or for market. Notwithstanding the thoroughly useful character of the book, it is so enlivened with curious historical incidents,

anecdotes, etc., that it is entertaining reading. Few people, even of those who do their own marketing, really know what they eat, and we feel that we do our readers a service by bringing this book to their notice, and placing it within their reach for \$2.50. It is a 12mo, of 455 pages, illustrated. Published by Orange Judd & Co.

Death of Col. B. P. Johnson.

The veteran Secretary of the New York State Agricultural Society, Benjamin P. Johnson, died April 12th, at his home in Albany, at the ripe age of 76. He has been the Corresponding Secretary and chief business manager since 1844, until the last annual meeting, at which time he declined re-election on account of his increasing infirmities, but was elected to the Recording Secretaryship, in order that he might continue to feel that he was still officially connected with the Society, which owes so much to his zeal and untiring efforts. His memory will be held in high regard by all who knew him.

My Ten-Rod Farm; or, How I Became a Florist. By Mrs. Maria Gilman. Pp. 119. Loring, Boston. This work gives the story of a widow lady, who made a living for herself and family by the sale of flowers. The story is so interesting, and so well told, that one is tempted to finish it before laying it down. While the lesson of perseverance it inculcates is a good one, we cannot consider the work as affording a guide to those wishing to become florists, though some useful hints are given. Narratives of this kind, in which a slight foundation of fact is embellished by a superstructure of fiction, while they serve to create a taste for horticultural pursuits, are always unsatisfactory as to their practical details. Sent from this office at the publisher's price, 50 cents.

Grapes.—"D. P., Jr." The Delaware is apt to crack after a rain. The Iowa will probably ripen evenly when the vine gets older. Young vines should not carry too much fruit.

Black Knot.—"D. P., Jr." We know of no variety of plum that is exempt from the black knot.

Canary Seed.—"Subscriber." This is grown in the south of England and should succeed in N. J. In England it is sown in rows a foot apart, using 16 to 20 quarts of seed to the acre. It ripens in September. The yield is 30 to 40 bushels to the acre. The straw has but little value as fodder.

Varieties of the Grape.—M. Sisley sends us a work containing the descriptions and synonyms of the varieties of the grape cultivated by M. Pulliot at Chironbles (France). Four hundred and six varieties are described, and numerous synonyms referred to the proper name. A work of this kind demands a great amount of careful experiment and labor, and we hope to see the time when some one shall do for our American grapes what Mr. P. has done for those of Europe.

Diseases of the Grape.—Mr. Verdoc, an European Vine Dresser, has given a lecture before the Cincinnati Horticultural Society on the above subject, a copy of which has been sent us. The lecture was given in French, and we hope it has been incorrectly translated, as we have rarely seen so much false science as it presents in its English dress.

"California Bean."—"Subscriber," Point Edward, Ontario. The description given applies to the Asparagus or Yard-long Bean. Thorburn has it.

Manual of Fig Culture in the Northern and Middle States. By Mr. James T. Worthington, Chillicothe, O. Mr. W. has for some time been known as a successful fig-grower, and in this little pamphlet he gives his method. It is to grow the plants in such a manner that they may be laid down and covered with earth to protect them during the winter.

Honeysuckles and Aphides.—"W. A.," Poughkeepsie, N. Y., finds the flowers of his honeysuckles completely destroyed by plant-lice, which resist ordinary remedies; and he asks what to do. We have never been troubled with the lice upon the flowers. Probably if the vines are examined early, the trouble can be checked before it gets desperate. Try strong tobacco water and soft soap. Who will suggest something better?

Sage and Thyme.—Several Subscribers. These herbs are grown around New York as annuals. The seeds are sown in a seed-bed as early as the soil is ready and kept free from weeds. The plants are set out in June and July as a second crop, after cabbages, beets, peas, etc., have been cleared off. The details of culture, which we have not space for, were given in June, 1866.

We are unable to say how this method compares for profit with that in which the plants are grown as perennials and possess the land year after year.

Okra.—"A. S. R." See notes on work for planting. The pods are the parts used, and are taken when perfectly tender and not stringy. They are sliced crosswise and used for thickening soups. The whole pods are boiled tender, dressed with drawn butter, and served as asparagus. Most persons do not like them in this way at first trial, but soon become fond of them.

Gardening without a Garden.

"J. R. McF.," who has no garden, wishes to know what he can flower in summer in pots. Among annuals the Balsams, Asters, Phlox Drummondii, Petunias, Portulacas, Nemophila, Tagetes signata pumila, Bartonia aurea, Mignonette, and most of the medium-sized annuals, Geraniums, Fuchsias, Cuphea ignea, Mimulus, Gazanias, Lobelias, and many others, may be had of the florists. It would be well if the pots could be plunged in moss, sand, or some other material, to retain moisture and prevent the roots from becoming dry. Proper attention to watering and shading is essential to success.

Striped Bugs.—Every year brings proposed remedies. A. F. Gibboney, Millin Co., Pa., writes, that water in which refuse onions or the tops and peelings of onions have been steeped is efficacious in driving away bugs from squashes and all their family, as well as the insect that troubles cabbages.

To the Agriculturists and Horticulturists of Illinois.

Gentlemen:—As the spring is now opening, and "bugs" are about to commence operations, I wish to inform you all that I am on hand, ready and willing to attend to all such cases. Any information that any of you may desire on this subject, I shall always supply, so far as I am able, answering all communications promptly by mail, or, if preferred, through the columns of the *American Entomologist*. If possible, send in every case, along with your letter, specimens of the particular "bug" that is troubling you, with a full account of when he appeared, where he works, how he works, what amount of damage he has done, whether he is also troubling your neighbors, etc., etc. The more specimens you send, the better; and they should never be inclosed loose in the letter, because in that case Uncle Sam always "squashes" them so flat that it is often impossible to recognize them. Flies, beetles, moths, etc., may be packed either dead or alive in any little stout pasteboard box, along with a little cotton wool, or any such matter, to fill up the empty space. But grubs, maggots, caterpillars, worms, etc., should always be inclosed alive in a little tin box—the tighter, the better—along with a sufficient supply of their natural food to last them on the journey. Otherwise they generally die on the road, and shrivel up to nothing. For very small insects of any kind, and whether dead or alive, a quill, securely plugged at both ends, forms a very convenient package.

Rock Island, Ill.,
April 8, 1869.

BENJ. D. WALSH,
State Entomologist.

The Geological Survey of New Jersey.

The State of New Jersey has done two very sensible things. It has completed its geological survey, and then placed its report where those interested in it can obtain it otherwise than through political influence. The report is a handsome octavo, well illustrated, and is accompanied by a portfolio of geological maps. Every one interested in the agricultural and mineral resources of New Jersey should have this report, which may be obtained of the State Geologist, Professor Geo. H. Cook, New Brunswick, N. J. The report, with portfolio of maps, \$6.00; or with a single map of the State, \$4.00.

Barberry and Blight.—"Senex," Albany, N. Y. The blight upon grain is one of those obscure forms of vegetation that have several distinct stages of existence; the progeny of the grain blight may live upon a very distinct plant, the progeny of this upon another plant, and the offspring of this third may be the grain blight again. It is a subject which has but recently commanded the attention of naturalists, and though the matter is not decided, it looks as if the rust on the barberry leaf might be one of the forms of grain blight.

Whitewashing Trees.—"J. T. B.," Fall's Church, Va., asks for our ideas on whitewashing trees. The object in whitewashing is to destroy vegetable parasitic growth, such as mosses and lichens, as well as such eggs and cysts of insects as may be secreted under the loose bark. There are several objections to it: in the first place, the appearance of a whitewashed tree is unnatural and exceedingly ugly; this may be overcome by using coloring matter in the wash. An-

other, that the whitewash fills up the pores of the bark, and interferes with its functions. This depends upon the condition of the bark. When the bark is young and smooth, whitewash would be detrimental; but if the bark is so old that it has commenced to crack, and form flakes or scales, it is then dead, and of no further use to the tree. All the advantages proposed to be gained by whitewashing can be attained by the use of potash, or soda lye, or by strong soft-soap. After these have accomplished their work, they are washed off by the rains, and the old scales of the bark fall away, and leave a clean, smooth trunk. It is better to use whitewash on old trees rather than to neglect them altogether, but it is much inferior to the other applications, which, in order to obtain the best effect, should be applied in a damp time.

Melon Culture.—The amateur cares more for excellence in a melon than he does for quantity, while a melon for market must yield well, bear transportation well, and be of good quality besides. The Green Citron and Nutmeg are the varieties grown for the New York market, and those who give especial attention to melon culture obtain, by a careful selection of seed, a "strain" best suited to their purposes. A new variety, originating at Alton, Ill., the Alton Large Nutmeg, has received the commendations of both growers and dealers. Mr. O. L. Barler, by whom it was introduced, informs us that this variety is likely to be thoroughly tested, as six bushels of the seed have been distributed. The following is Mr. B's method of growing melons: "Select light, dry, and moderately rich soil, containing a considerable amount of sand. We prefer a hill-side, slanting to the south or east. The melon will endure heat, and drouth even, but will not bear 'wet feet.' The soil must be worked deep, and be finely pulverized. Plant in May, in rows eight feet apart, and five feet in the row. Put in the hill not less than twelve or fifteen seeds, to provide for the bugs, and finally thin to two or three plants. The cultivation must of course be clean and complete. It will probably be of service to pinch the runners when they are just beginning to show themselves—when they are no longer than the finger; to wait until they are two or three feet long is to waste labor. To produce the best results, thin out the number of fruits on the vine."

Pumpkin Spinach.—Shirley Hibbard, in his (English) Gardener's Magazine, suggests a use for the pumpkin vine, which will be new to most of our readers. It is to use the tender shoots as spinach, or greens. He recommends that the growth of the plants be well established before the cutting is commenced, and to remove all the young fruit that sets. He says: "Cook them in the same manner as turnip greens, and serve chopped up with butter, pepper and salt. The brilliant green color, delicate aroma, and grateful flavor of the pumpkin-tops, when properly cooked, will commend them to the nicest epicure."

Watermelons.—"J. N. G.," Burlington Co., N. J., writes: "It takes no small amount of work to raise good watermelons, and to have a crop, at the same time, that will pay. First, the ground should be well plowed, and hills made about eight feet apart each way, one foot square, and about ten inches deep. Each hill should be filled with well-composted manure, and trodden solid before finishing. Plant from eight to ten seeds to each hill, and cover lightly with a hoe. When the fourth leaf has formed, thin out to one or two to each hill; one is better than half a dozen, but it is best to leave more, until they get well started, as one may get destroyed. When the vines commence to run, the hills should be well trodden down again around the vine. The plants will require frequent "farming" or cultivating until the fruit commences to set, when they should not be moved. With plenty of manure, and some guano or bone-dust, a light, sandy soil, (which is the best) and good cultivation, there will be a large crop. I have seen the ground nearly covered with melons, some weighing from 30 to 40 lbs."

The Wax Bean.—"Where did it originate?" asks "J. B. H.," Petersham, Mass. This variety is known as Indian Chief Wax, German Wax, and has been for a long time in cultivation in France, under the name of Bean of Algiers, a name which would indicate its origin, but we cannot just now put our hand on any authority to show that it did originally come from Algiers. Geographical names are not always correctly applied to plants, as witness the "English Walnut."

Wild Parsnip.—"G. S.," Iona, Ontario. The wild and cultivated parsnip are one and the same species. The cultivated will become a weed, and the wild, by a treatment similar to that described for the wild radish on p. 133, last month, may, in a few years, be brought back to the cultivated form.

Yeoman's Grape Trellis.—T. G. Yeoman, a well-known fruit grower of Walworth, N. Y., has

invented a very simple contrivance for slackening and tightening the wires of a trellis. By the movement of a lever the wires of a vineyard can be made slack on the approach of winter, in a very short time, and in spring, when it is necessary to stretch the wires, it can be done with equal rapidity.

Learning Farming from Books.—"J. J.," Baltimore, says: "I am a city tradesman and know nothing of the farming business. I want a book that will teach me to farm profitably."—The art of agriculture is not learned from books alone. Perhaps the best thing you can do is to hire out to a good farmer for a year, and learn the handling of farm tools and crops. In that way you will acquire something of the art, and, what is more important, learn whether you like it or not. No one book contains what you wish to know upon the subject. A reprint of Allen's American Farm Book, greatly enlarged by Lewis F. Allen, now ready, is more nearly what you want than anything else we know of. Price \$2.50.

Garlic.—"Greenhorn," Honeoye Falls, N. Y. Garlic will grow with you. Get the bulbs, and break them up, so as to separate the small bulbs or "cloves," which are to be set in rows, six inches apart. They are sold by the New York seedsmen.

White Blackberries.—"J. M. McA.," Summerville, Mich. There is no good white variety in general cultivation, and if yours is as described, it is interesting. In going South, some of your stock should be left North; it may not be suited to a warm climate.

Apricots.—"Greenhorn." The plum makes the best stock for the apricot, but it is of no use to try apricots without first determining to fight the curculio.

Mixing Potatoes.—"Several inquirers." It does no good to argue the case. It is claimed that the mixing of the pollen of two varieties will affect the character of the tubers. We shall be glad to receive any evidence upon this point.

Herds-grass, Timothy, Red-top.—"T. L. S.," Lewisburgh, W. Va. These common names are transposed in some localities. Herds-grass of Pennsylvania is Red-top. Herds-grass of New England and New York, etc., is Timothy. In view of this the name Herds-grass might as well be dropped.

Compost Heaps.—It is often recommended that when manure is thrown into heaps in the field, it should be covered with a layer of earth to prevent the escape of the ammonia. The experiments of Dr. Voelcker, at the Royal Agricultural College at Cirencester, in England, have established the fact that the evaporation of ammonia from large heaps of manure goes on but slightly: for the reason that, during the decomposition of the manure, certain organic acids are formed at the same time the ammonia is evolved, and then immediately unite with the ammonia, forming non-volatile compounds. There is an active escape of ammonia from the interior of large heaps, where the heat is too great for the chemical changes above referred to; but, as it approaches the exterior parts of the heap, where the heat is very much less, the ammonia is completely taken up by the organic acids and retained. There will be but a trifling escape of ammonia while there is sufficient moisture to retain it, for water absorbs and retains many hundred times its bulk of ammonia gas at ordinary temperatures. These non-volatile compounds, from being highly soluble in water, are liable to be washed away by every rain storm, giving the well-known brown color to the drainings of manure heaps.

Fish Guano.—We advise all farmers, during the coming season, to purchase fish guano with extreme caution. The *Menhaden* or *Moss-bunker* seems to have deserted our shores during the past autumn, and most of the fish-oil works have remained idle. If the market is this year as largely supplied as it has formerly been with fish guano, the assumption will be natural that there is a good deal besides fish refuse in it.

Garget, or Caked Bag.—In very many cases, if this troublesome disease is taken in hand at its very outset, it may be entirely reduced by thorough and frequent sponging with cold water, and a subsequent gentle friction with the hand, previously dipped in cold water. This is much more simple, and less likely to produce injurious results, than the use of the various ointments recommended for the purpose.

Farm Roads.—There are two conditions which are essential to all good roads. One is a dry foundation, and the other a hard surface. A well-drained road-bed and a covering of stone and gravel make a

perfect passage-way for the heaviest of vehicles. Such roads, however, are too expensive to be universally adopted by the farmer; and he generally contents himself with laying stone or gravel, or both, over the wetter portions of his roads. It would be far better, if only one of the two conditions above named can be attained, to secure the dry foundation rather than the hard surface; and half the cost of stoning or graveling expended in the construction of a good underdrain, four feet below the surface of the road, either under the middle or at one or both sides, would accomplish better results: and during all but a small portion of the year, the road would be very satisfactory, and its condition yearly improve.

Manure for Corn and Potatoes.—"J. L. C.," asks, "Is guano for corn and potatoes preferable to a mixture of lime, ashes, and plaster?"—For potatoes, yes; for corn, no. It is probable that the ashes and plaster would be a valuable addition to the guano for potatoes. But the ashes should not be mixed with the guano, as they set free more or less of the ready formed ammonia, especially if the ashes are moist.

Deep Sowing.—"H. S.," Waverly, Pa., writes: "One of my neighbors says that peas and radishes do best planted 8 or 10 inches deep."—Some growers think that peas do better if planted 4 or 5 inches deep. If radish seed were buried 8 or 10 inches, we doubt if it would ever see daylight, but we never tried it.

Sowing Half the Farm to Barley.—"E. S. B.," of Pittsburgh, Pa., writes: "In the January number of the *American Agriculturist*, you hinted that barley would be a profitable crop if well cultivated. I have a farm of twenty acres. Do you think it would pay me to put in a crop of barley, say ten acres? My land is in splendid condition, as I plowed in a crop of clover last season."—If we are to understand that a crop of clover was plowed in last summer, and the land has had no crop on it since, but has been fallowed, there can be little doubt that, if the other conditions are favorable, a very heavy crop of barley will be obtained. But if the land was planted to corn last season, and well cultivated, it would also be in good condition to sow barley, though of course the growth will not be so large. As a rule, however, it is a mistake to sow half a farm to any one crop—especially of a crop of which, as we judge, you have had little experience. If the land has been thoroughly fallowed since the clover was plowed in, it will be in splendid condition for almost any crop. Potatoes, carrots, parsnips, onions, beets, mangel wurzel, and crops of this kind, would do well. If you are conveniently situated for marketing, and can command the necessary labor, they would pay better than barley. For root crops, on such a soil, two or three hundred pounds of a good superphosphate per acre would prove valuable.

Best Machine for Sowing Guano, etc.—"J. L. C." We cannot answer this question. There are several machines used for the purpose. But the one we happen to have, although it sows plaster very well, is apt to clog with superphosphate and other artificial manures. And as even distribution is desirable, we still continue to sow by hand. The cost of sowing is so small compared with the cost of the guano, that we do not feel it so much as in the case of plaster.

Burning Lime on the Farm.—"D. B.," German Settlement, West Virginia, asks for a plan of burning limestone, for manure on the farm, with wood. Some years ago he made the attempt, but failed. When wood or coal is abundant and cheap, lime may be burned without a kiln; but when wood is worth two, three, or four dollars a cord, it is cheaper to build a kiln and burn in the ordinary way. When a farmer has limestone on the farm, and he intends using a considerable quantity of lime for manure, it will pay him to erect a kiln for his own use, rather than draw the lime from a distance. But as a general rule, it is better to leave such work to those who make a business of it.

Selling Straw to the Paper Mills.—"S. D. S.," Hagerstown, Md. The policy or impolicy of doing this depends on circumstances. Straw is worth about \$3.00 a ton for manure. If you can get from \$5.00 to \$10.00 per ton, on the farm, as we can in the neighborhood of the writer, it will of course pay much better to sell it than to rot it down for manure. Instead of selling all the straw, the better plan would be to sell half of it, and buy oil-cake with the money, and feed it out to stock with the remaining half, on the farm. And if you make anything on the stock, buy guano with the money! In this way, you can sell straw with great advantage to the farm, and ultimately to yourself.

Poisoned Rats will poison hogs eating them,

A New Winter Pear.—Duchesse de Bordeaux. J. S. Houghton, a well-known pear grower of Philadelphia, informs us that he has fruited this variety for several years, and considers it to possess every good quality. The pear is of French origin, but seems perfectly adapted to our climate. Mr. H. says: "I know of no winter pear which can compare with it for size, beauty, keeping qualities, and general excellence, and no tree more hardy, thrifty, robust, and fruitful." It keeps until March and April. Mr. H. has no trees for sale, but says that it is being propagated in the nurseries.

Quinces.—"G. W. G." These require a deep and rich soil. They will do well on a sandy soil that is properly manured. Muck or woods' earth will be useful.

The Buchanan Pear is a chance seedling found by Mr. Isaac Buchanan near Astoria. It is of good size, St. Germain shape, and of positively good qualities. We tested it in February, and though the specimen had become shriveled from being kept in a warm room, it was very sweet, juicy, and vinous. With proper care it would no doubt keep very late.

Crop for an Orchard.—"Subscriber," Alexandria, Va. If your trees are 15 years old and the tops nearly meet, why put in any crop at all? No profitable crop can be raised in the shade, and trees of this size need all the soil. You cannot eat your cake and have it too, and a given area of land can not do double duty.

Apple Blossoms in January.—Doct. Wm. H. Trowbridge, Stamford, Ct., sends us some apple blossoms. His son cut from an apple tree a stake to support a climber, and the flowers expanded in a warm room. This serves as a hint for experiments with flowering shrubs.

Peach Orchard.—W. H. Finley. If you can raise peaches in your locality (which is not given) at all, land that is in good condition for farm crops will do for peaches.

Trouble with Cherry Trees.—Corresponding Secretary of Farina, Ill., Agricultural Society. Please forward a specimen. From the description, it looks like the beginning of the Black-knot.

Small Fruits.—"E. B. H.," Milford, O. Barn-yard manure, well decomposed, is as good or better than any other application. Ashes are valuable, as is bone-dust. Guano should be used with caution; about 200 lbs. to the acre is enough. Canes of blackberries that have once fruited are to be cut away. Your fruit for next year will be borne on the wood that grows this year. Cut quite down to the ground when they have done bearing. A shelter of pines or other trees would be a great advantage. You would have fewer plants winter-killed, and the crops would be earlier and surer.

The Stark Apple Again.—On page 99, last March, we gave Dr. Warder's description and outline of the Stark, and in a Basket item, recorded the opinion of the Fruit Committee of the American Pomological Society, that the apple is an old variety, the Pennock. Neither of these articles exactly suits some of our Western friends. A. H. Gaston, Henry Co., Illinois, writes that the statement that it "bears heavily on alternate years," (which is Dr. Warder's), is a mistake, as it is a certain and annual bearer. Mr. D. B. Page, of the same county, says, that the Stark and Pennock are as unlike as a "pumpkin and musk-melon," and thinks some one must have played a joke upon the Committee, by sending them the Pennock for the Stark. Mr. Gaston sent the specimens. Mr. H. McMasters, Leonardsburgh, O., also writes us an article defending the identity of the Stark, which is too long for us to insert. We can assure our correspondents that we have no desire to do other than justice to the Stark or any other apple. Such experienced pomologists as Downing, Barry, Elliott, and others, may be in error; still we think their deliberately considered opinion worth recording. We here give the opposing opinions more space than we did the statement which called them forth, and we would suggest as a final settlement of the matter that the parties interested in the Stark present their arguments to the Fruit Committee of the American Pomological Society, who, if shown that they erred in their decision, will be very ready to acknowledge it.

Troublesome Bugs.—"C. C. P.," Salina, Kansas. If you will send some specimens in a box we will try and find out what your annoying insect is. Smashed specimens are not to be identified.

Glazing Flower Pots.—"J. F. B.," asks for a "Solution for glazing flower pots." Earthenware is glazed in the furnace at the time of baking, and

we know of no ready means of doing it otherwise. Why glaze flower pots at all? All florists reject them as worthless. The porosity of the pot is essential to the well-being of most plants. A sickly plant in an old or over-baked pot, which has its pores filled up, will often recover if put into a new and porous one.

In Season and Yet Out of Season.—Several correspondents have sent us late in the winter, suggestions and devices suited to that season only. By the time we could present them to our readers they would be untimely. A number of them are good enough to salt down for next winter.

Tomato Experience.—Mr. J. A. Potter, Lowell, Mass., reports his experience with tomatoes as follows: "I planted on the 17th of March, seven different kinds of tomatoes, viz.: Large Smooth Red, Orangefield, Keyes' Early, Tilden, Cedar Hill, Sims' Early Cluster, and Maunpays Superior. Some of each kind were set May 23d, in a sloping piece of ground facing to the south, where the road-dust and sand had washed on about one foot thick some five years ago. They all did well last season. The Large Smooth Red I consider one of the most profitable of any in this vicinity, it being large, smooth, solid, and of good flavor, and about as early as any in the market; first ripe July 27th.... Orangefield. First ripe July 25th; the plant dwarf and very stout; very prolific; fruit of good flavor and fair size, but rather too rough for market.... Keyes' Early. First ripe July 28th; a great bearer; fruit of good flavor; rather too small for market; rather backward about ripening up to the stem.... Tilden. First ripe August 4th; large, smooth, fine-flavored, not very prolific, cracks badly before ripening up to the stem.... Cedar Hill. Ripens with the Tilden; too rough and irregular for this market.... Sims' Early Cluster. A rapid grower; great bearer and fruit of good flavor; too small for market; ripens with Cedar Hill and Tilden.... Maunpays Superior ripens with me the same time as the Tilden; a strong, healthy vine, and an enormous bearer; solid, splendid flavor; good for this market; one of the best.... The Large Red Smooth and Maunpays Superior are the best I have ever seen. I would not be willing to change them for any others I ever saw.

Hedges in Kansas.—E. Snyder, Highland, Kansas, writes: "This is decidedly a country for Hedges. In fact it is the best and cheapest method of fencing here, and a few years will see nearly all the old farms enclosed with hedge. The season must be favorable for a hedge of any kind to do well on freshly plowed sod, (prairie) in this section, and one of the important points of raising a hedge is to have a good growth and good 'stand' the first season of planting. It is not advisable to plant on ground that is not in good condition for the growth of plants. The article on page 99 (March) is calculated to mislead the inexperienced. I have no doubt but the person who wrote it did just as he said, and was successful, but according to my experience he would fail nine times out of ten here. I have tried every way the books and papers tell about, adding my own ways, and have planted early and late, fall and spring, and can positively say that early spring planting, done right, with good plants is preferable to any other time. As a general thing a hedge planted here in June would not make more than one-half the growth it would if planted in April. Millions of hedge plants are annually lost by following the plan recommended by "G. N. M.," although I have known a few to succeed tolerably well in following it under very favorable circumstances.

Drains and Trees.—"J. J. S." If your drains are four feet deep, as they should be, plant the trees as near as you please. The usual way in draining orchards is to lay the drains between the rows.

Flowers.—The new ones tested last year are described in the Horticultural Annual, by Peter Henderson. Beautiful illustrations are given.

Onions, Tobacco, Flax, Hops.—Our pamphlets upon these special cultures continue to be the standard works. They are each made up of essays from a number of practical cultivators living in different parts of the country, and one supplies what another omits. Sent by mail at a very low price. Onion Culture, 20c.; Tobacco, 25c.; Hops, 40c.; Flax, 50c., by mail.

Lining for a Fountain Basin.—"A 10-years' Subscriber" has cemented his basin with water lime and it is plastered upon the clay cracked by the frost. We are not informed of the size of the basin. A margin of stone laid in cement would stand. The trouble is probably in the freezing of the clay margin.

Manuring Grapes.—"F. W." We should not use manure at all, unless the land is very poor.

Manure should never be put in contact with the roots of a vine or tree at planting, but be thoroughly incorporated with the soil.

Windsor Beans.—J. C. Le Tonzel, Bermuda, writes: "I have now growing in my garden a nice bed of Broad Windsor Beans, that look as promising as any I ever saw, but will bear no fruit. The vines have been flowering for at least two months, without the sign of a pod; new flowers replace the old ones on the stalk, and wither off just at the time one would suppose the vines would bear. My neighbors are not better off than myself; their vines blossom, but yield nothing, although planted at about the same time."—We doubt if Windsor Beans can be raised in your climate. Even the heat of our summers is too much for them. They can be had in perfection only in cool, moist climates. Try them in your coolest month, and top them when they commence to flower.

The Schoolmaster Very Much "Abroad."—At one of the State Fairs last autumn, we saw a collection of Dabbias, on which was the following notice: "Any person wishing to buy any of these dabbias can select any collar."

A Low Hedge.—J. G. Caulkins, Dutchess Co., N. Y. We have never seen any attempt to keep the Honey Locust as low as 18 inches. The stems would probably get very "stubby" after a while. The nurseries have now several dwarf forms of Arbor Vita which would answer the purpose, as would the Holly-leaved Barberry, the Mahonia of the nurseries.

Bugs and Vines.—F. C. Blanchard. The plan of placing a frame with a pane of glass over the hill is a very old one and has often been mentioned in these columns. It is, however, very effective.

Trimming Trees.—A practical Fruit grower writes: "In a late No. of the *Agriculturist*, it was suggested that in trimming, large limbs must be supported or have a piece first taken out from below the branch, to prevent the falling limb from splitting off a portion of the wood or bark, which should be preserved unharmed. My method has been, first to saw the branch off, a foot or fifteen inches above the point of final trimming; thus making it easy to hold the stump with one hand while safely sawing it off with the other. Unless a person is well skilled and careful, and the saw keen and fine, it may be well first to cut through the bark below, while using this method. With care and a good saw, it is not necessary. Sometimes, where the angle of a branch is very small above, it is best to saw wholly through from below. My mode is convenient for this."

Lavender.—Anna, (who does not give her address). Lavender is a low, scrubby plant with pale green, narrow leaves. Sweet Basil is in some localities called Lavender. That is an annual with green broad leaves, and is probably the plant you have grown.

Gardening for Profit.—No person who grows vegetables for market, whether on the large scale or in a smaller way, should be without this valuable work. Though written by a market gardener, it is full of interest to the private gardener, and no one who has a garden can fail to find it of use. Price by mail, \$1.50.

Concentrated Manure.—W. Vintner. Peruvian Guano is used with great success in vegetable gardens. If stable manure has already been plowed in, 300 lbs. to the acre is sufficient. If no other manure is used, 1,000 lbs. to the acre is applied. In either case it is sown broadcast after plowing and harrowed in. Most other concentrated fertilizers vary so that it is difficult to tell much about them; a good superphosphate may be used in the above quantity, and probably equal quantities of that and guano, for general use, would be better than either alone. For plants set in hills it is better to incorporate the fertilizers with the soil of the hill before planting than to sow broadcast.

Tuberous Chervil.—C. D. Smith has tried the seeds spring and fall, and failed to raise any plants. We tried them once in autumn only, with the same result. The French, who grow it more or less extensively, say, that if sown too late the seed will not germinate until the second year. The probable trouble is that the seed is too old.

Chinese Yam.—"S. W. C.," Deer Isle, Me. The Chinese Yam will probably mature with you. It is not raised from seed, but from pieces of the roots, and little bulletts found upon the stem. It is not worth growing, as the labor of digging is too great. Those who are fond of it grow a few plants as a garden vegetable.

Coal Ashes.—The chief use that has hitherto been made of coal ashes is in the construction of foot walks and road-ways, for which they are excellent,—even better than gravel; but wherever the earth closet is used, it is an excellent plan to employ the finer sifting of coal ashes in combination with sifted earth—say $\frac{1}{2}$ ashes to $\frac{3}{4}$ earth—as the material for disinfecting.

Taming Bulls.—As ordinarily kept on farms, bulls are quite liable to become so cross and vicious, that it is not safe to keep them after they attain the age of four or five years. But if two are kept instead of one, and they are broken to the yoke, and worked as regularly as oxen are, they will do as much work, do it rather more briskly, remain docile longer than when not used, and seem to be made in all respects more useful.

Hanging a Grindstone.—"G." Lawrence, Kansas, asks how to rig a grindstone to run by the foot. This needs a double pair of friction rollers and an axle, square at one end to receive a hand crank, and with a short crank at the other to be connected with the pedal by a rod with a hook to go upon the crank. These "grindstone fixtures" may be bought at any agricultural establishment in the larger cities. They are hampered by no patents, and cost no more than a common blacksmith would make them for, and are better made. A grindstone cannot be driven by the foot if it has not friction wheels, and it is pretty hard work then if one grinds any thing heavier than a carving knife.

How to Make a Ewe Own her Lamb.—"W. A. T." has tried several plans, but without success. If the lamb dies soon after birth, we have generally succeeded in getting the ewe to take another lamb. The main point is to separate the ewe from the rest of the flock, and put her in a small pen. Hold her while the lamb suckles, and milk a little of the milk on the lamb. Do this four or five times a day, not neglecting it the last thing at night, and the first in the morning; and in nine cases out of ten the ewe will take to the lamb in two or three days, and frequently much sooner. Another of our Editors says: Cut off a portion of the skin of the dead lamb and put it over the neck and shoulders of the living one, wool side out, and the dam of the deceased lamb will always adopt it immediately. The skin may be removed after half a day or so. The best way is to have no dead lambs.

Cure for Hog Cholera.—"J. T. D." Rising Sun. We know of no rewards that have been publicly offered for a cure. There is one, however, which will surely be given to any one who makes known a certain cure or remedy, or even a tolerably efficient cure or preventive, and that is the reward of the consciousness of having done the country a great good. No man has a moral right to keep such a secret to himself for the hope of reward. After submitting it to sound veterinarians and physicians, if they approve, it should be published with great minuteness and particularity. The trials made and results obtained all over the country would settle the truth of the claim. Then there is not a State, which has offered a reward, which would not gladly pay it if proof of discovery be presented.

Holding on for High Prices.—A correspondent writes: "Your counsel against holding out for higher prices has been well exemplified in our neighborhood. Some raisers of sage herb refused 40c., waiting to get 50c., and now can't get 25 cents per pound."

What Ails the Hens?—Hen diseases have been very little studied. One subscriber writes: "Within three years I have lost a dozen hens. They begin to droop, and get black about the head; dung, loose and yellow; have but partial command over their movements, stagger and waddle about, and in from one to three weeks they die. They have been generally my best two or three-year-old Brahmas." Another says: "My hen acts dumpish, and will not eat. I found the nest covered with blood, and that she had been bleeding from the mouth." [Has she not been hurt?—Ed.] Yet another: "My hens have a very singular disease. The eye swells and closes; pus forms of an offensive character, and the skin surrounding the eye is distended with a substance of a yellowish white color, resembling cheese-curd in consistence. The fowls generally die, though this be cleaned out thoroughly and often. They are ravenously hungry, yet grow weaker all the time."—Our own experience suggests no certain treatment, and we would be glad to have successful practice described.

Carts versus Wagons.—It seems strange that so few carts should be used by farmers in this country. They are much more conveniently geared up, more easily worked in cramped places, are unloaded with less trouble, and are, in all respects, for the jobbing

work of the farm, more economical and convenient than wagons. Provided with a good set of top-boards and a bay rack, they ought to become in this country, as they have in England, the principal vehicle for use upon the farm, although wagons are better for journeys on the road.

Nutritive Value of Different Crops.

—A subscriber of the *American Agriculturist* in Ulster Co., N. Y., writes: "I would like to know 1st, the fattening properties contained in carrots, ruta-bagas, mangel wurzels, turnips, oats, and corn; 2d, How many pounds of each are equal to one hundred pounds of hay?"—We would like to know, too; but the question is surrounded with so many difficulties that no one has yet been able to give an entirely satisfactory and definite answer. The tables given by Professor Johnson in the appendix to "How Crops Grow," showing the "Proximate Composition of Agricultural Plants and Produce," furnish the latest and most reliable data to be obtained. But a volume is required to explain them, and this Professor Johnson will give us in due time. We may, however, assert that, of the roots named, carrots are the most nutritious; mangel wurzel next, and nearly equal to the carrot; ruta-bagas next, worth, perhaps, twenty per cent less than mangel wurzel; and turnips, worth one-third less than ruta-bagas. We cannot say how many pounds of carrots are equal to a bushel of oats or a hundred pounds of hay, any more than we can say how much bread is equal to a pound of beef, or a galloon of oysters. Those who pretend to give a definite answer on this subject are little better than quacks. We must take into consideration the question of digestion, of the importance of concentrated nutriment, and of the adaptability of the food to the kind of stock. The mere fact that one food contains more nutriment than another proves very little in regard to its value. If we could get the nutriment of one hundred pounds of hay concentrated into fifty pounds of hay, the fifty pounds would be worth much more than the one hundred pounds. Grain and the better class of roots are, consequently, from the fact that they contain a less quantity of crude, indigestible material, of much more value than the mere amount of nutriment that they contain would indicate. And hence it is that we so frequently insist on the importance of producing rich grass and hay. A farmer should never raise turnips when he can raise a good crop of ruta-bagas, or ruta-bagas when he can raise a good crop of mangel wurzel or beets. The advantage of the turnip lies in the fact that we can sow it later, and it requires less manure; and when fed out early in winter, it affords food at a comparatively cheap rate. But to compare a crop of common white turnips with a good crop of mangel wurzel is like comparing a crop of buckwheat with one of Indian corn. Both are good in their place.

Cotton Seed Meal, and Cotton Seed.

—Chemical analysis shows that cotton seed meal is one of the richest foods now available for farm stock, while its price is relatively lower than that of any other. After considerable experience in its use with milch cows and other animals, we are prepared to say that its effect in feeding seems fully to sustain the indications of the analysis. It is not well to feed it very largely; and there are authenticated instances of its having speedily produced death when given to young calves and young lambs, although sucking colts, eating it from the lambs' troughs in the fields, have not been injured. It is almost always necessary to teach cattle to eat it, by at first mixing a small quantity of it with other meal. Its effect on the value of manure is very great, probably even better than that of linseed meal or rape cake. A neighbor of ours used it last spring as a manure in the hill for corn with excellent results. He considered the application profitable, and proposes to repeat it during the coming season. An Arkansas planter recently informed us that he regarded a bushel of hulled cotton seed as equal in value to two bushels of corn in fattening hogs. The hulled seed, from which the oil has not been expressed, must be fed even more cautiously than the meal, which is deprived of the greater share of its oil.

The Ayrshires as Milkers.—Howard S. Collins, of Collinsville, Conn., furnishes the Practical Farmer an interesting account of how he came to select the Ayrshires as milkers. In 1856, he commenced farming on a poor, neglected hill-side farm, of one hundred and fifty acres, that, at the time, supported only six head of stock. He began by keeping a dozen head, soiling them in summer, and steaming food for them in winter, and every year taking up some poor land to be thoroughly cleared, manured, and seeded down again. We have visited his farm, and though beautifully situated, we have rarely seen a more unpromising field for testing the merits of high farming. There are few men who have studied agriculture more thoroughly than Mr. Collins, or who have carried to the task of renovating we might almost say creating, a farm, greater skill, system, energy,

perseverance, and science; and he deserves his success. On this farm he now keeps fifty head of cattle and three horses. He has tried the "Natives," grade Devons, grade Short-horns, grade Ayrshires, and has finally decided that, for his purpose, (selling milk the year round) properly selected thoroughbred Ayrshires are the most profitable cows for him to keep. We know Mr. Collins to be a very careful and systematic man, keeping an exact account of the produce of every cow on the farm, and his statement is entitled to great weight.

The season is fully three weeks later than last year. We do not publish poetry; observe, and save postage. An India-rubber sponge has been invented in England. The N. Y. Evening Mail estimates that 3,000 quarts of pea-nuts are retailed in New York daily.

"The times is the money," is the way one of our French exchanges renders our proverb "time is money."

William R. Prince, formerly known as a nurseryman, died at Flushing, N. Y., March 28th, aged 73 years. Ashes are beneficial to fruit trees. "J. S. K." should not heap them around the trunk, but scatter them.

A peck of clover seed per acre, especially on spring crops, is none too much.

Answer to several.—We have had many assertions that wheat would turn to chess, but no proof.

The Kansas State Agricultural College has 168 students, —71 ladies, and 97 gentlemen.

A Georgian has patented a bottomless flower pot for starting cotton in hot-beds.

The Southern Horticulturist is published by H. A. Swascy, M. D., at Yazoo City, Miss., at \$2 per annum.

The third Annual Fair of the State of Louisiana takes place at New Orleans on April 6th.

"Ex-Squire" is right when he says his record of the time of planting and of the coming up of seeds is interesting to look over. It is useful, too.

Notes on fruit prospects are interesting. "D. P., Jr.," would add much to the value of his by stating in what part of the country they are taken.

If, as a correspondent suggests, a plum-tree that was plugged with sulphur was free from canker, we do not believe that the immunity was due to the sulphur.

Farm laborers in Ireland are becoming scarce. A Tipperary paper says "the hands in the market look for 2s. 6d. to 3s. per diem," or nearly one dollar in currency.

France sends over ten million dollars' worth of butter per annum to England and about five million dollars' worth of eggs.

Now comes Nebraska, with a journal, the *Agricultural Intelligencer*, edited by S. W. Brooke, and published monthly at Rulo, for \$1.25 a year.

Forney's Weekly Press, (Philadelphia, Penn.) has a Farmer's Department. To say that it is conducted by Thomas Meehan is assurance that it is well managed.

Orono Potato is to be the name of the potatoes heretofore known as Foot, Reed, Carter, and Orono. So voted the Maine Agricultural Society.

"Shady Cottage" is a very pretty name, and so is "Lilac Dell;" but it would help correspondence wonderfully if people who date their letters in this way would say what their Post-office address is.

Pigs are so scarce in some sections that a common breeding sow sells for \$75 to \$100, and last fall pigs at prices equal to 20 cents per lb., live weight. Better eat more mutton than buy pork at these rates.

Grain is low and butter is high; a cow is a machine for converting the one into the other. But a flour-mill will be run to little advantage if there is no wheat in the hopper. Draw your own conclusion.

The Central Chamber of Agriculture in England represents the opinions of 15,000 Agriculturists by means of 90 deputed members, and it has great political power in all matters affecting the interests of farmers.

The Department of Agriculture sends out for trial white English "Excelsior Oats" that weigh 51 lbs. per bushel. Beautiful oats, but a little mixed with barley, that it would be well to pick out before sowing.

The Massachusetts Horticultural Society awarded in 1863, for premiums and gratinities, \$1,685. This will do very well for a provincial town, but the New York Horticultural Society gave \$0,000,000.

The Fireman's Journal is the latest specialty in the way of journalism. Full of interest to those who have any property to burn, as well as to those who keep property from burning. New York: semi-monthly. \$1.50.

The gentleman who puts questions to us through the Farmers' Club is informed that's not the way for us to receive communications. The Weekly Tribune was doubtless hard up for something to fill its "Agricultural" columns, and printed his letter. Thank you, Mr. Trib.

Pine Straw.—The old leaves or needles of the pine fall every summer as soon as the new growth is made. This material throughout the Southern country is known as pine straw, and more or less use is made of it as bedding and manure. Mr. Frank Heiderhoff, of Bay St. Louis, Miss., sends us an analysis, the name of the analyst not being given. This represents the whole amount of ash as 2½ per cent; and as it contains 4½ per cent of alumina, we conclude the straw contained more or less soil gathered with it. The ash contains, according to this analysis, about 5½ per cent of potash, a little soda, 13 per cent of lime, and more than one per cent of phosphoric acid. This indicates but a slight value, so far as ash ingredients are concerned, the most valuable ingredient, potash, amounting to less than 3 pounds to the ton. However, the amount of nitrogen, which is not stated, may be, and probably is, considerable. Mr. H. recommends composting pine straw with muck, marsh mud, or calcareous marls. Mr. Wm. R. Hammond, of Tyrrell Co., N. C., writes that he draws the straw from the woods every two or three weeks, uses it as bedding for stock, and then throws it into the hog-pen. Then he scatters "ditch-bank" muck over it, and when the ditch-bank is used up, has the men mix it in the hog-pen. In January it is gotten out, and lies under cover until spring.

Smart Hens in Vermont.—A correspondent calls our attention to the following clipping from a country paper, and asks what we think of it. "Mr. Martin Leonard, of Pittsford, Vermont, from eight hens raised last year 45 chickens, and sold 70 dozen eggs for \$162, besides using 110 dozen in his family. Mr. L. says his hens are a greater source of profit to him than his sheep." We think we will not try to match the Down Easters telling stories. Let us count: 45 and 8,520 and 1,320 make 9,885. That is the number of eggs that eight hens laid in one year, which is more than an average of three and one-third apiece for every day, allowing no time for hens to sit and take care of their broods!

Too Fat.—"S. W. H.," of Kansas, writes: "My neighbors tell me my mares are too fat for their colts to do well when foaled. What effect will the condition of the mare have on the foal?"—The mare ought not to be very fat, for excessive fatness is accompanied by a diseased condition of the system. Still, they ought to be in good condition, even moderately fat. In such case the mare will probably get on well, have an abundance of milk, and the foal will be finer, both at foaling and afterwards, until it is weaned, if not for life.

How to Raise a Calf without Milk.—"R. S.," of Richmond, Ind., writes that he is trying to raise a calf without milk, and is feeding it a mash of wheat middlings and Indian meal, but is in doubt whether this is the best way. We have had no experience, but have known of calves being raised with very little if any milk. They were given for drink tea, made by steeping and boiling good sweet hay, thickened with boiled fine Indian meal and wheat flour. Tendencies to constipation were checked by feeding a thin porridge of wheat bran and oil-cake, and the scours was stopped by boiled milk, thickened with fine wheat flour.

Norfolk Co., (Mass.) Agricultural Society.—At the recent annual meeting of this Society, the Hon. Marshall P. Wilder, who had been President ever since its organization, (twenty years,) took his leave of the office in a most interesting and touching address. The Norfolk Society is one of the most influential among the many Agricultural Societies in Massachusetts, and has always been foremost in promoting agricultural improvement in that State. Hon. John S. Eldridge succeeds Col. Wilder, who is made Honorary President.

Bee Items.—By M. Quinby.

The Bee Malady.—Since our last report, letters have been received from Clay Village and Carlisle, Ky., and Circleville and Rising Sun, Ohio, relating to the bee malady, but presenting no new feature. In suggesting probable causes, two or three describe the weather as far back as last May. "Cold, drenching rains, etc." One says they "froze to death;" another that "there was no pollen;" another that "there was plenty," and that "the honey was good;" another that "it was bad." And another, that "it could not have been poisoned honey, and carried from one hive to another in December—it was too cold." His commenced dying at that time, and were still dying up to March 15th. One correspondent says, "Maple and Willow were in bloom in February in Indiana." There must have been many days warm enough for bees to rob—especially deserted hives—before these blossoms appeared. Hence the fatality to this late day may be accounted for on the theory first suggested. I see no hope of saving a single colony, not even of those shipped there from other States, until every particle of

this honey is beyond their reach. Notwithstanding the impossibility of printing all the views and solutions offered, I hope those who have observed any thing unusual will report further.

Italian and Black Bees.—J. Scholl, Lyons Station, Ind., asks: "Will Mr. Quinby please inform your readers, whether he keeps Italian bees only, or if he has both Italians and black? Do not the Italians degenerate?"—Mr. Quinby keeps both Italian and black bees, has several yards, and manages in this way: In spring, when summer arrangements are completed, the home yard consists of about a dozen good Italian stocks, seventy-five native ones, and one hundred queen-rearing boxes. Box hives, if any, are transferred to movable combs. One or two of the strongest are fed, to induce early breeding of drones. A few of the native queens are destroyed, six or eight at first, and replaced by Italian queens from the full stocks. The Italians, deprived of their queen, will construct a score or two of queen cells. Remove more of the black queens, the day before these hatch out, then cut out all cells but one, and give one to each of the black hives, last deprived of its queen. These hatching, supply the hive with a pure queen, and Italian drones only being out, their purity is insured. This must all be done before black drones have made their appearance, or even before eggs for them are deposited. Otherwise, the combs with sealed drone brood must be lifted out and every larva or chrysalis cut in two, or destroyed in some other way. Long before the close of the season, all these colonies, as well as the increase—beside very many in other yards—are changed to Italian, and are sold off to reduce the stock to the original number by the next season.

Straight Combs.—John W. Shaw, Maryland, asks: "How can straight, single combs be secured in movable comb hives always, or a great majority of times? If this can not be done, the new system is nothing. I have failed with the Harbison and Langstroth hive. I would be glad if it could be answered satisfactorily and immediately."—After several years' experience, I find that this subject, like most others, demands labor and care, if we would accomplish what we wish. I have learned that if the under sides of the tops of the frames, as a guide, are acute angles, made very smooth, and they are placed at the right distances apart, and one end of the hive elevated about thirty degrees, the other way perfectly plumb, and this done at once, on hiving the bees, nine-tenths of the swarms will build their combs straight. Should the adjustment of frames and raising one end be put off until next morning, I can readily comprehend why the simple act of elevating would throw the combs across from one to the other. A part will follow the guide perfectly until almost across the whole length of a long frame, and then cross over to the next. The cause seems to be in the greater thickness of store combs, which they build near one end. Yet any one determined to have straight combs may succeed. Open the hive three days after hiving, and see that they start straight. There is the most danger when they are nearly across. Every second day is as long as it is safe to leave them. When any comb is being made crooked, get some heavy tin or zinc, or even thin shingle, three or four inches wide, and long enough to reach the bottom. With a carving knife, or a piece of shingle, this soft, new comb may be turned back in a line with the frame. Blow in some smoke to drive the bees away, to prevent crushing, and put in the tin to hold it until secured by the bees. Should a little honey be pressed out in the operation, no harm will be done. Repeat it, if they again go crooked. I have bought a great many bees, and furnished hives to put them in; often I did not see them until October, and when I found any combs crossing badly, I would leave them until the next spring, when I would take out all in one body, if necessary, and make the crooked part straight, and hold them until fastened by small strips of wood, as shown in "Bee-keeping Explained." I often break up a box hive, and transfer the contents to frames, and hold them in the same way until fastened. It is the fault of the operator if the combs are not made straight in these cases. It can be done. "M. Quinby" never intended to say that bees died of "buckwheat honey."

Corn Cultivation in Iowa.

We have an interesting statement from Mr. John Molony, Jr., Dubuque Co., Iowa, giving his experience in trying the *American Agriculturist* plan of raising corn. He made one mistake, and soon found it out. Clayey or loamy land must neither be worked nor even gone upon while it is too wet to plow. There is no objection to low, flat hills, but they will not hold the corn

up. It will usually stand better in flat culture than if much hilled. Mr. M. writes as follows:

"My crops for 1868 were pretty good,—I believe better than usual. I thank the *Agriculturist* for it, and go in for Book Farming; but my neighbors don't. In the fall of 1867 I commenced hauling out manure on a field of oat stubble for corn. The field being near the road, every one saw the manure, and thought I was crazy. My friends came into the field and told me that I was manuring twice too thick, and that I would have no corn, but all weeds; but I had read somewhere in the paper that corn ground could not be too rich, so I let them talk away. It being late in the season I could not finish the hauling out, and the ground was frozen so hard that I gave it up, leaving about an acre unfinished. In the spring I got at it again; every day that was not fit to plow I was hauling manure. I hauled what stable manure I made during the winter, then I got at the hog-pens. Some days were wet and the ground was so soft that I could hardly drive through the field, but I got the acre manured, and I left it so, in heaps, until I had the small grain in. I spread the manure in lands, and as soon as I had a rod or so spread, I plowed it down about ten inches deep, and worked in that way until I had it all plowed and harrowed, both ways. It was in good order, except what I manured in the spring, and every lump on that was as big as my head; the reason of which was driving over it so many times with team and wagon when wet, there being more clay in that side of the field. About the 18th of May I "listed" it both ways, with a marker, four feet each way; on the 19th, I planted it with Yellow Dent or Hackberry corn. I went through it three times each way, using the cultivator all the time, and any weeds that remained after the cultivator I pulled out, as I was trying flat cultivation. The neighbors said it would be great corn if I would plow to it with the one-horse plow; they said if I did not the wind would blow it down. I told them I would risk it. Haying and harvesting came on sooner than I expected, and I had to give up the corn. About the time it was earing out, we had a heavy rain with high wind: it blew down a good deal of my corn, and some of the neighbors', too, but more of mine than of theirs; of course they laughed, and said it was because I had not plowed to it. The land was manured, and the corn from eight to twelve feet high, and I suppose that made it blow down. This year I think I will use the plow for the last time, keeping about midway of the row, plowing rather shallow, throwing the soil two or three inches upon the stalk, leaving a flat hill, instead of the usual sharp ridge. The plan here is to run the plow close to the hill and throw the dirt from six to eight inches up on the stalks, scalding them, and cutting off the roots also. They say they want to smother the grass and weeds. They might smother some grass, but not many weeds, because the weeds are nearly as high as the corn.

The best way to get weeds and grass out of the hills is to pull them out by hand, and it pays to do it. I had about ten acres last season not in the manured field, but on pretty good land, only nine years in use. Harvest came on before I could finish weeding, and I had to let about forty rows go, and it wasn't very weedy; but when picking time came, there was a difference. Four rows of the clean corn filled the wagon box, while it took five rows of the weedy corn, and then it was small and a good deal of it soft. I will make it a rule from this time to plant no more corn than I can take care of. Although the wind blew down a good deal

of the manured field, I had over 70 bushels to the acre, just double what I had the year before, on the same kind of land, not manured, though I gave it nearly double the work. The weeds did not trouble me so much in the manured field, as in the other field. The best corn was where the horse and hog manure was put.

Most farmers here are very careless about their manure. In my travels through the country, I have seen manure thrown over the fence into the high-road. I have seen corn not two feet high, and plenty of manure going to waste around the stable and cattle-yard. Hog manure is hardly ever used at all, nor the cleaning of the fowl-house; and wood-ashes are all thrown away. No wonder that the land is giving out, and crops getting light. A good many here are selling out and going West. They say the land here is giving out. Won't it be the same with the Western farm in a few years? I think so. I have seen farmers haul manure away from their stables and throw it in a heap in the pasture, or on the road side, and they having plenty of land in cultivation that never got an ounce in thirty years, while corn on this land, I believe, did not yield ten bushels to the acre."

Picking and Packing Strawberries for Market.

BY S. B. COMOVER, WEST WASHINGTON MARKET, N. Y.

A large proportion of the strawberries and other small fruits sent to market arrive in bad order, and are consequently sold at such low prices that they do not pay the raiser. Indeed, they are frequently a loss, as they do not realize enough to pay the shipping expenses. It is useless to spend time and money in obtaining the best varieties, and producing fine fruit, if it is not properly picked and packed, and handled with care, until it reaches market. It should then be in such a perfect condition as to last at least twenty-four hours after it is received, to give time for selling and use.

The marks or names of the producers become known to the buyers and dealers, and great care should be used by the producer in putting up fruit, to build up a character. When a certain mark acquires an established reputation for honesty and uniformity of packing, it is invariably spoken for and engaged at the highest prices by the dealers, and always meets ready sales; while those of doubtful character are the last sold, at reduced prices, and, in case of a glut in the market, are not sold at all. Strawberries should be carefully picked after the dew has dried off the vines, carried to a shed or shady place in the field, and spread out thinly on a clean sheet or cloth. When perfectly cool from sun heat, and all external moisture is dried, they should then be carefully sorted by trusty persons who will use care to put none in the cups or baskets that are over-ripe, bruised, or of inferior size. The cups or baskets should be well filled, and slightly rounded. Place the top layer, which should be of choice berries, with the hulls down, or out of sight as much as possible, but not "topping off" so much that the top of the cup will not be a fair representation of the rest. All sandy fruit should be kept by itself, and if sent to market, not faced with fruit that is not sandy, but put up to be sold for what it is. Neither should unripe berries be put in the bottom, and faced with ripe ones; they had better be thrown away. The pickers must be watched, and those who will not pick the fruit carefully, and in proper condition, should be discharged. One

bruised or over-ripe berry in a cup, will, in twenty-four hours, ferment, mold, and spoil the whole cup full. In picking strawberries, the hulls should be left on, as it prevents bleeding, and the fruit will keep a great while longer.

The packages should hold what they profess to contain, a full quart, pint, or one-third of a quart, and should be so filled when packed as to be full when they arrive in market. From the experience of myself and all the principal dealers in fruits for the past ten years, there is no basket in which berries will carry so well, and command such ready sale, and consequently such high prices, as the Beecher cups or baskets, or one of similar size and shape, and equally strong. Baskets of this kind are preferred for the following reasons: They hold full measure, and are well ventilated; being larger at the top than at the bottom, each layer of fruit forms an arch with the sides, which prevents the top berries from crushing those below; they are strongly made, having a firm bottom, which prevents crushing the berries in handling; and having flaring sides, they will pack into each other, and take up less room when empty, while in the hands of the retailer; and being round on top they show the fruit off to better advantage than any of the square ones. The crates should hold from twenty-four to forty-eight quarts, in order to be handled easily and carefully, and the grower's name and residence, as well as the name and address of the consignee, should be marked plainly upon the crate. In order to prevent delay and mistakes, inform the consignee of the shipment by early mail or telegraph, so that he may know when and where to look for the packages promptly on arrival.

Sparrows—Are They Useful or Not?

BY M. JEAN SISLEY, LYONS, FRANCE.

In the Feb. number you express some doubts about the usefulness of the European Sparrow.

This subject has been much discussed in Europe. Sparrows have their advocates and their detractors, but the general impression is now, that they must be to a certain degree protected.

In support of this opinion, it may be useful to state a fact not generally known. Since more than a century ago the question was solved in the north of Italy, where rice and other grains are grown very extensively. At one time people thought that sparrows were a nuisance, and the cultivators of that country destroyed them all; but they soon had to regret it, as all sorts of injurious insects soon propagated in large quantities. They went to consult a celebrated naturalist (whose name is forgotten), and his answer was:

"Get all the sparrows you can procure from neighboring countries, and make as many holes as you can in the walls of your houses and churches; each hole will become the temporary abode of a pair of sparrows, and each pair, to feed its offspring, will have to destroy thousands of insects, which you cannot yourself put down. You will object, that when harvest time comes, your fields will be covered with flocks of sparrows and the destruction of grain will be enormous; but this you can very easily avoid.

"Young sparrows, just before they are able to leave the nest, are a delicious meal. Visit the nests regularly, take all the broods except the last one, which will come after you have stored your crops and will feed on what has escaped your notice. The loss will therefore be scarcely perceptible. This is the only and rational solution to the question of sparrows."

This advice was strictly followed, and the

destruction of the early broods is still practised in northern Italy. In France, sparrows are not disturbed and their mischief is very little felt.

About Roses.

Those who wish to purchase roses become much bewildered when they look into the catalogues. They find several classes of roses, with "no end" of varieties under each class. The classification of roses is very puzzling, even to those who have given some attention to the subject, and Mr. Parsons, in his work on the Rose, (a new and revised edition of which is just ready) has very much simplified the matter by making only three classes. The first of these is Garden Roses, which includes the old-fashioned kinds, and many newer ones, that bloom only once a year, and does away with the distinctions of Damask, Provence, Hybrid China, etc. This class also includes the Moss Roses, Briers, and Climbing Roses; they are all hardy. The second class is the Remontants, a word signifying to bloom again. These are often called "Hybrid Perpetuals," a name calculated to deceive those unacquainted with the fact that they are not at all "perpetual," but give a fine bloom in the spring, and usually a weak one in autumn. These are all hardy, and among them are found some of the finest bloomers. The third class is the Everblooming Roses, and includes the Tea, Noisette, Bourbon, and Bengal Roses. These are really perpetuals, and are in bloom nearly all the season. Unfortunately they are tender at the North, and must either be "heeled-in" in a dry place, or be laid down and covered with sods and a bank of earth. It is now too late for our readers to do much with any but the last named class, the Everblooming roses, which are sold by the florists in pots. They will do well in any good garden soil, but if the soil is old it is better to make an excavation and put in some fresh earth from the pasture, mixed with well-decomposed manure. It is difficult to make a selection when there are so many varieties, and all of them charming. Perhaps after all the best way for the inexperienced is to send to a reliable florist for a given number of plants, to be free bloomers, and to include as great a range of colors as possible. When the roses are planted then trouble begins, and no one need expect to have flowers without trouble. The tender shoots and buds will be covered with plant-lice (green-fly, or aphid). Syringe with tobacco-water, soapsuds, or a weak solution of cresylic soap; many can be destroyed by going over the plants with a soft brush. When the rose-bugs come, as they sometimes will, and make havoc, nothing short of hand-picking will avail. But neither of these troubles is anything compared to the rose-slug. If any of the leaves appear to be eaten, look upon the under side for a small green worm. A few days' neglect, and the bush will be stripped of every leaf, and it will be a long time before it recovers. Having tried all the proposed washes, we accept the slug as a conundrum and "give it up," as far as they are concerned. No doubt that cresylic, whale-oil, and tobacco soap, would "do" for them, if one could readily apply it to the under side of the leaves. We have found it much less trouble, and a great deal more efficacious, to give the bushes a smart shake, early in the morning; this will dislodge all the worms, which are to be dispatched, as they lie curled up on the ground. This is only practicable where there are a few bushes, but any one who cares for roses will be willing to take the trouble.

Swine—Breeds and Breeding.

There are probably not less than 37,000,000 hogs in the United States at this time—there certainly will be more than that number in the



JEFFERSON COUNTY.—(LARGE BREED.)

course of the summer, or before the autumn slaughtering. There is no domestic animal more easily improved, and none which so quickly repays care and attention. It is a great pity that such careless methods of breeding and feeding should prevail, for we venture to say the wealth of the country is thereby lessened at the average rate of at least \$5 a hog, amounting, in the aggregate, to \$185,000,000 a year. The temptation to kill the best hogs in the fall is so great that breeding sows are often selected simply because they are poor and not fit to kill, and these are paired with males chosen from common stock in forty-nine cases out of fifty, we presume. Though the boars may be good, of their poor kind, the sows are, as often as not, bad, and so very little, if any, improvement takes place in the race. Now and then a little fresh blood is brought into a district, which makes its mark, and for years an improvement is observed.

Among other excellent articles in the *American Agricultural Annual* for 1869, is one by our collaborator, Mr. Harris, on Pigs. He there inculcates forcibly the doctrine, that for profitable market pork, we should use large, pretty well-bred sows, with great digestive functions, crossing them with some of the fine, pure breeds, like the Berkshire, Essex, or Suffolk. This cross imparts to the progeny the fineness of bone, and smallness of offal or worthless parts possessed by the sire, and the great capacity of digestion, characteristic of the dam. By such crosses, pigs of exquisite beauty, to

a high price for them as breeding animals. The sows may be used to breed from with partial success, but, for the production of really good breeding sows, should be crossed back with some large breed, like the Chester Co. Whites,

or the Jefferson Co. Breed. This would produce fine, large, grade sows, of strong constitutions—great milkers, and, of course, ravenous feeders—just what are wanted to cross with the fine-boned Essex or Suffolk, to give us pigs fit to kill at 9

months old, weighing 300 to 350 pounds. They are easy keepers, too, for they make the most of every ounce of feed they have, whether in the pasture or penned. They are always plump and round, unless half-starved. Mr. Harris tells of his selling such pigs at a year old, right out of his pasture, to a drover, to "top off" a car load of pork for the New York market.

There is no secret about having such pork, and there is no question about whether it is

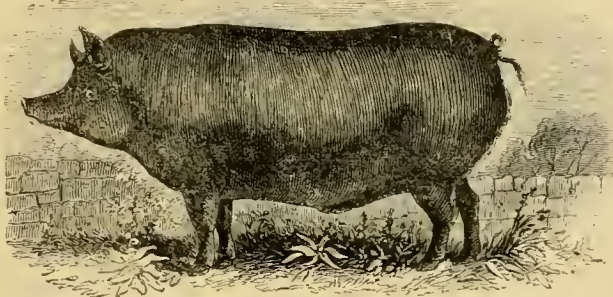
dresses just as white as that of a white pig, and we know no reason why color should make any difference in our preference of breeds except as it may be one of the points to indicate good breeding or purity of race. The Jefferson Co.



BERKSHIRE.—(SMALL BREED.)

Breed is a composite race of immense hogs, reaching not very rarely the weight of 800 or 1,000 pounds, which latter weight was that of the one sketched for our engraving. They are a finer boned breed than the Chester Co. Whites, and, we are inclined to think, have less rugged constitutions. The last named are too well known to need description. Originating in Chester Co., Penn., they have now been carefully bred for several years, and enjoy a wide reputation.

Both these breeds are white and large, and make admirable stock for breeding sows. The engravings of them are from sketches taken by Mr. Edwin Forbes. This gives us another opportunity to reiterate one of the cardinal principles of good farming—the use of thoroughbred males. We cannot otherwise reckon with certainty upon improvement in any of our stock. By using full-blooded boars, a stock of coarse pigs, in two generations, may be brought up to great excellence, but a continuance of the same system is necessary to maintain its

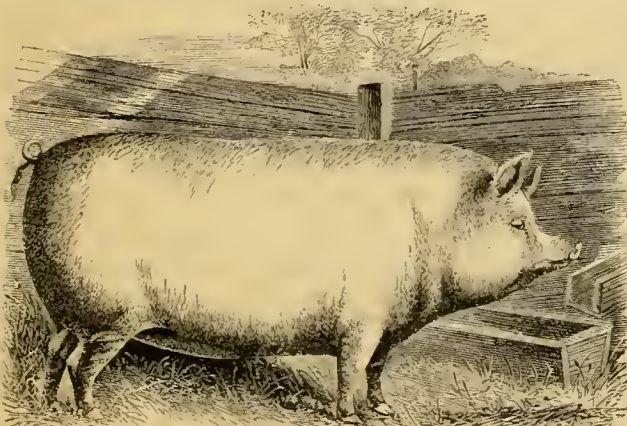


ESSEX.—(SMALL BREED.)

high character. The continual use of males of a small breed will refine and reduce the size of pigs, especially after the first generation. Hence there is especial need of maintaining pure both the large and the small breeds. By this means we gain, in the way above specified, strong digestive powers, constitution, rapidity of growth, fineness of bone, and smallness of offal in hogs destined for feeding and slaughter. The same principles apply to raising beef, mutton, and poultry, and those who

good to eat, if the pigs feed in clover pastures, and are hardened up for killing with sound corn. If all our pork was treated in this way, we should hear of no hog cholera or trichinae and other parasites, from one end of the land to the other. When these views become disseminated, and accepted, and lived up to, we shall have in every part of the country careful breeders, who profitably devote themselves to raising certain breeds pure. Our farmers ought to have a personal knowledge of the best breeds of swine, and intelligently make

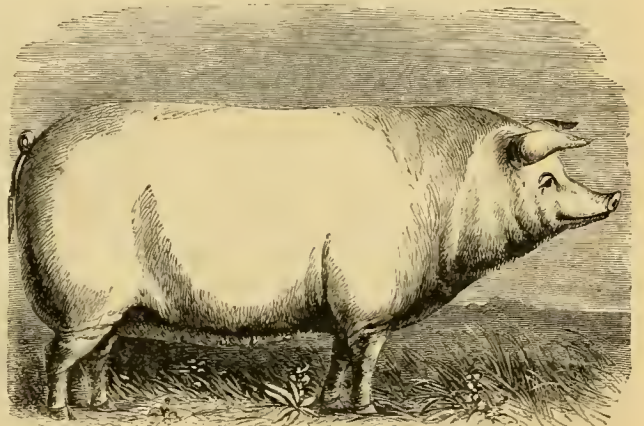
their own selections, to unite qualities they most desire. We give engravings of several of the best breeds. The Essex and Suffolks are famous for fineness of bone, smallness of offal, and the certainty of imparting these valuable peculiarities to their offspring. The



SUFFOLK.—(SMALL BREED.)

a breeder's eye, are produced—often far surpassing their parents. The boars, however, should be used only for slaughter, though thousands of farmers may be found who would pay

Berkshire is a somewhat larger breed, also fine in bone, and very economical feeders. The black color of the Essex and of the Berkshire is with some farmers considered an objection. The pork



CHESTER CO. WHITE.—(LARGE BREED.)

follow them will be sure to be the gainers. The time has passed for an intelligent farmer to advocate using mongrel or grade male breeding animals with any class of stock however inferior.

Walks and Talks on the Farm—No. 65.

A farmer in this vicinity, who is a liberal feeder, a month or two ago killed a hog that weighed 650 pounds, and he got over \$100 for him. He was twenty months old. This will pay. But I am told by a large dealer that the demand for such excessively large hogs is falling off. "Even the boatmen, who formerly would buy nothing but the fattest and heaviest pork, now prefer lighter pork, provided it is firm and good."

I killed and put down this winter a thoroughbred Prince Albert Suffolk, and also some grade Essex. The latter were very fat, and the quality and quantity of the lard produced quite excellent. The pork of the Suffolk is good, but that of the Essex is far better. It is remarkably firm, tender, and fine flavored. It has always been claimed for the Essex that they afford the best family pork, but I never more than half believed it, as breeders are very apt to attribute all manner of excellencies to their favorites. I am not altogether convinced yet, from the fact that the Essex were fed a month later than the Suffolk, and were much fatter. A farmer who will keep either a Suffolk, Berkshire, or Essex, and cross him with good-sized common sows, will have pigs that will make pork good enough for any man. But one thing is important, whatever breed is selected,—he must be *thoroughbred*. It seems impossible to convince farmers of the value of an established breed in transmitting their good qualities to their offspring. The remark, "A good hog needs no pedigree," is sheer nonsense. Those who talk in this way only exhibit their ignorance of the first principles of breeding. It is not enough that the animal to be used has the right form and fattening qualities. You want to be sure that his ancestors for several generations have had the same qualities, and that they are fully established in the breed. Such an animal, when crossed with common stock, will impress his qualities on the offspring. A grade, or common animal, no matter how superior he may be in form, lacks the necessary force to overcome the defects of the animals he is bred to. This fact is so well established, that I have no patience with a farmer who will use a cross-bred pig when he could buy a first-class thoroughbred for ten or fifteen dollars more than he has to pay for the nondescript animal he uses. I have no sort of doubt that a good grade Essex pig (the offspring of a common sow and a *thoroughbred* Essex) will be worth for the butcher at nine months or a year old, at least ten dollars more, in proportion to cost of feeding, than a common pig. And if so, what is the value of a thoroughbred Essex, Berkshire, or Suffolk, in a neighborhood of farmers with sense enough to patronize him?

"As to pasture," writes our friend in Ohio, "you say that one of your fields, the past summer, supported stock equal to at least two cows per acre until after hay harvest. Yes, until after hay harvest; but how much stock would it have carried after that? If you have any way of making the land in your neighborhood carry stock at the rate of *one* cow per acre say six months, I will be under great obligations to you if you will tell us how it is done."

The field alluded to was plowed up in August, and "fall-fallowed" for spring barley, and consequently I cannot tell how much stock it would have carried through the season. Probably not more than a cow to the acre. And during the month of August, *one* cow to two acres,

even, might have had rather a short allowance. But it is not necessary to confine stock to one field. We have to make hay; and a field of rich clover, cut early, would afford good aftermath by the time the pasture began to fail. Or we might soil the cows with green corn fodder during a drouth. I will not say that I can take a twenty-acre field of grass and make it carry twenty cows from the middle of May until the middle of October. I should have too much pasture at one time, and too little at another. But that I can make it produce as much grass as twenty cows can eat in six months, I have no sort of doubt. I think, in a favorable season, I *could* make it produce as much as thirty cows could eat in six months. In Mr. Lawes' "experiments with different manures on permanent meadow land," an annual top dressing of mineral manures, and 400 lbs. each of sulphate and muriate of ammonia, produced the first year, 6,970 lbs. of hay per acre; the second year, 6,940 lbs.; and the third year, 7,508 lbs.; or an average of 7,139 lbs.; while the unmanured plot produced an average of only 2,691 lbs. The hay was cut the last week in June. The aftermath was allowed to grow until October, and was then fed off with sheep. On the average of the three seasons, the unmanured plot kept thirty-three sheep per acre for one week, and the plot manured as above, sixty-six sheep per acre, for one week. This was calculated to be equivalent to over half a ton of hay per acre, on the basis that the sheep (Hampshire Downs) would eat grass equal to sixteen pounds of hay per week. This plot, therefore, produced grass of the most superior quality, equal to a little more than four and a quarter tons per acre. And if a large-sized cow or ox will eat grass equal to half a ton of hay per month, twenty acres of such land would afford grass for over twenty-eight cows or oxen for six months.

I think I *can* make my land do better than this. The field on which these experiments were made had been in grass "for certainly over a century; indeed," Mr. Lawes says, "for as long a period as is included in any record that can be found relating to it." Now, however unprofitable it may be to break up such land, there is little doubt that a greater amount of produce can often be obtained by so doing.

Our land is far better adapted to the growth of clover than that at Rothamstead, and yet in some experiments made while I was there, ten thousand nine hundred and twenty-eight pounds of clover hay was obtained in one year from three cuttings, (June 26th, August 6th, and October 19th,) or nearly five and a half tons per acre. This produce was obtained from a simple top-dressing of three hundred pounds of sulphate of potash per acre. And from clover sown in a "garden soil," there were cut at three cuttings in one year, eighty-nine thousand six hundred and twenty pounds of green clover, or over forty-four and three-quarter tons per acre, or eighteen thousand one hundred and twelve pounds of hay,—over nine tons per acre. This soil had been used as a kitchen garden for "probably two or three centuries." It was one of those delightful old English gardens that we read about so much, but so seldom see in this country. It received, doubtless, abundance of "spit-manure," thoroughly incorporated with the soil. But I have reason to believe that no artificial manure was used. At least I recollect once asking the gardener if he used any, and he said he did not, and I brought him a little superphosphate from the laboratory to use on lettuce, and he said the effect was magical. Now, if a soil will produce nine tons of hay per

acre without artificial manures, how much stock would it carry if we gave it an occasional dressing of plaster, superphosphate, guano, etc.? My Ohio friend will laugh at this kind of reasoning. But in all seriousness, I believe we have little conception of how much grass an acre of land can produce. There is, doubtless, a limit—perhaps determined by the power of the sun's rays; and if so, we can produce more here than in England. But of course the real question is, Will it pay? Each farmer must determine this matter for himself. It is often a question of capital. But more frequently it is a question of faith and pluck. A farmer, at any rate, should determine to cultivate his land a little better every year. If on the rich land of the Scioto Valley he cannot bestow cultivation sufficient to produce more than thirty-three bushels of corn per acre, followed by a crop of wheat of eleven bushels per acre, followed by clover and timothy that will not support more than one cow on two acres, I *think* the better plan would be to plant only half the field to corn, and summer-fallow the other half. If the corn is cultivated thoroughly, and if the fallow is a *real* summer-fallow, the effect on the wheat will probably be very decided, and, at any rate, the clover and grass will be vastly better. And this good crop of clover can be made the basis of further improvement.

A few days since one of my horses was taken lame in the fore leg. He had been drawing logs out of the woods, and it was thought that he had sprained his shoulder. This is a serious affair. Nothing but absolute rest will effect a cure. But on consulting the authorities, I found that Youatt, Mayhew, and McClure, all agree in saying that shoulder lameness is of very rare occurrence. Youatt says: "In not more than one case in twenty is the farrier right when he talks of his shoulder lameness." "The symptoms of shoulder lameness can scarcely be mistaken; and when I have mentioned them," says Youatt, "the farmer will recollect that they very seldom occurred when the village smith pointed to the shoulder as the seat of disease, and prescribed for the animal to no purpose. In sprain of the shoulder, the horse evidently suffers extreme pain while moving, and, the muscle underneath being inflamed and tender, he will extend it as little as possible. *He will drag his toe along the ground.* It is in the lifting of the foot that the shoulder is principally moved. If the foot is lifted high, let the horse be ever so lame, the shoulder is little, if at all, affected." He gives other tests. And a thorough examination satisfied me that the trouble was not in the shoulder. I then concluded to again examine his foot carefully, and then I found the trouble. A piece of wood, an inch or more long and as thick as my little finger, had entered the foot between the hoof and the frog. It had been broken off level with the hoof, and was nearly concealed by the frog. It was not an easy matter to get it out. I got hold of it with a pair of pincers, but it broke, and I had to cut away the hoof and dig it out with a knife. So much for consulting "the books." I might have doctored this horse for shoulder sprain for a couple of weeks until the piece of wood worked itself out; and at this season of the year the loss of a good horse for a week or ten days would amount to more than all the best books on the horse would cost. The great point when an animal is sick, is to find what the trouble is. And I am not sure but that the best way is to call in all one's neighbors and let them give their opinions on the point. If it should be a case where there

are but six possible causes of trouble, and they name five of them, you will be pretty safe in doctoring for the sixth! The other day I was consulted in regard to a cow that was taken sick. She had been doctor'd for the "hollow horn." I thought the disease had been brought on by hollow stomach, and recommended some nice hay, bran mash, a little linseed tea, and a pint of *sound ale* a day. I think I should be a popular cow doctor—with the cows. Some one once told Hood that he "had never been sick a day in his life." "What a fool you must be!" was the prompt but not very polite reply. It would be better for our animals if farming was not such a healthful occupation. This man who had the sick cow is a strong and healthy man, who has been used to "rough it." And sick as his cow was, he turned her out with the rest into a field to water, with a keen north-east wind blowing, and the next time I met him, on asking "How's the cow?" he replied "I've taken her hide off." She was worth \$75; a few days' nursing would have saved her.

I used to have a great deal of trouble, and have lost several cows and horses. But for a year past I have not had a single trouble until the horse lamed himself in the woods the other day, except a slight attack of colic in a horse, which an injection of soap and water cured at once. We have made no change in the manner of feeding, except that when the teams go to the city, and are likely to be out beyond the usual hour of feeding, I insist on the men taking some cut feed along for the horses. Indigestion is the source of nearly all ordinary complaints in horses, and this is brought on by irregular feeding and watering, by exposure, fatigue, by long journeys without food in a storm, and then by overfeeding and *neglecting to rub them dry* before leaving them for the night.

A Kentucky farmer writes me: "I have three hundred acres of cleared land. There are three fields of fifty acres each, the rotation on which is corn, wheat, and clover, successively, and one field of one hundred and fifty acres in permanent meadow. Now, would it be better to divide the farm into four fields of seventy-five acres each, with corn, wheat, clover, and Timothy successively? With such a rotation, would there be too much clover with the Timothy when the object is to bale it for market?" The rotation would be as follows:

75-acre Fields.	1st year.	2d year.	3d year.	4th year.	5th year.
A.	Timothy.	Corn.	Wheat.	Clover.	Timothy.
B.	Corn.	Wheat.	Clover.	Timothy.	Corn.
C.	Wheat.	Clover.	Timothy.	Corn.	Wheat.
D.	Clover.	Timothy.	Corn.	Wheat.	Clover.

If the Timothy seed is sown in the fall, with the wheat, and the clover seed in the spring, we should, in this section, get an excellent kind of hay for consumption on the farm—say half Timothy, and half clover; and the next year the hay would be nearly all Timothy. If the Timothy seed is sown in the spring with the clover seed, the first crop of hay would be nearly all clover, and the next year it would probably be about half and half; and if kept in meadow another year, it would be nearly all Timothy. I have no doubt that more produce can be obtained by dividing the farm into four fields of seventy-five acres each, and cultivating them in the way proposed, than by cultivating only half the farm, and keeping one hundred and fifty acres in permanent meadow. And if all the clover and all the corn and stalks and the straw of the wheat are consumed on the farm, and the manure carefully saved and applied, the productiveness of the land may, per-

haps, be maintained, even if seventy-five acres of Timothy hay are annually sold. Much, however, depends on the natural fertility of the soil, and the thoroughness with which the land is cultivated for corn. If it was my case, I should be inclined to let the three cultivated fields of fifty acres each remain as it now is, and divide the one hundred and fifty acres now in permanent meadow into three fields. The farm would then have six fields of fifty acres each. I would then try to adopt a system of rotation, having two objects in view: first, to raise as much clover as possible, and second, to cultivate and clean the land thoroughly. And instead of selling seventy-five acres of hay, I would endeavor to raise as much from fifty acres. And the same with wheat. That it can be done, I have little doubt. At all events, if as much wheat and Timothy was not obtained from the fifty acres as from the seventy-five acres, I should expect the *profit* to be as much, or more. I would try the following rotation: 1st, corn; 2d, wheat; 3d, clover; 4th, clover; 5th, fallow; 6th, Timothy. I would sow nothing but clover with the wheat. Mow it for hay the first season; then pasture. The next year pasture until June, and, if it could be spared, then let it go to seed; if not, pasture the whole year. The next spring, pasture until June, and then plow it up, and summer-fallow thoroughly, and in August, seed it down with half a bushel of Timothy seed. The next year mow it for hay, and pasture it until time to turn it over for corn the next spring. If nothing is sold but wheat and Timothy hay, it will not be difficult to keep the land in good condition. A large stock can be kept. There will be fifty acres of clover hay every year, fifty acres of wheat straw, and fifty acres of cornstalks to be used for fodder. And there will be always fifty acres of pasture; and in the spring and fall, one hundred and fifty acres. Sheep will do better on the clover than cattle will. They can be wintered on wheat straw, and a bushel of corn to a hundred sheep. In this section, we could winter a good many cattle on fifty acres of cornstalks, with a little clover hay and corn meal. I have never been in Kentucky but once, and that was years ago. It is not improbable, if I was better acquainted with the agriculture of that State, I should see many objections to this plan. But if I wished to sell Timothy hay, I should adopt some such plan here. I have great faith in summer-fallowing for Timothy. But the hay is so good, that I should want to feed it out myself.

Here we cannot sow wheat after corn without great labor, and the practice is almost entirely abandoned. We generally sow barley after the corn, and wheat after the barley, seeding down with the wheat. We are planting less corn than formerly, on account of the high price of labor, and the difficulty of getting it husked. If the Husking Machines prove satisfactory, or we can obtain reliable labor at fair wages, we shall probably plant more. Corn is a splendid crop—the King of Cereals—and it is nearly the only "fallow-crop" that is adapted to our climate and wants. But at present I have made up my mind to try summer-fallowing more, and corn planting less, until we can obtain labor at reasonable rates. I have a piece of rather low land that is of too mucky a nature for wheat and barley. It needs plowing and re-seeding. I intended to summer-fallow it and seed it with Timothy this fall. But there is far less advantage in fallowing such land than a clayey loam. The Deacon urges me to plant

it to corn, and then seed it down with oats next spring. But I will not do it, because there can be no doubt of the fact that the oats take from the soil the very plant-food necessary to produce rich grass. I would rather seed it down with the corn. Cultivate the corn thoroughly, without hilling it up, and then when we can cultivate it no more—say in August—mount a horse, and go through the rows and sow from a peck to half a bushel of Timothy seed per acre. We cut our corn close to the ground, but if the stalks should interfere with the mowing machine, let the Timothy get ripe enough for seed, and cut it with a reaper, and bind it in bundles. Then in the winter, lay these bundles on the barn floor, and give the heads of Timothy a few sharp raps with a flail. Then if you want to sell Timothy hay, you will have an article that is just the thing for those city people, who are so fearful of feeding the least particle of clover. You can assure them that it is "clear Timothy," and entirely free from "dust."

"An Enquirer" in Ohio writes to the *American Agriculturist*, expressing surprise at my remarks in regard to the pair of wild turkeys being so much finer boned than the domestic turkey, and he asks "Is not the wild *always* better than the tame?" Most certainly not. The wild hog is far inferior to a well-bred domestic pig. A short-horn is vastly superior to a buffalo, and a Northern Spy is better than the Crab-apple. It may be that wild animals have better constitutions than the tame, owing to the fact that weakly wild animals, lacking the fostering care of man, die off, and thus the race is propagated only from the strongest. But for domestic animals we provide food and shelter, and often take more care of the weak. By and by the butcher comes along, and offers more for the best than for the poorest, and a short-sighted policy accepts his offer; so we breed from the very animals which, in a state of nature, would have died. If wild turkeys are better than our domestic turkey, (and I am inclined to think they are,) this is doubtless the cause. We kill those which are the fattest and mature the earliest, and *breed from the poorest*. Judicious selection and careful breeding would soon make the domestic turkey far superior in early maturity and fattening qualities to the wild.

Another Ohio farmer asks me whether plaster will do good on heavy clay land. If it is wet, no; if dry, probably yes. Also, how many rods of drain, three feet deep, a man will dig in a day. It depends on the character of the land, and the energy and skill of the ditcher. Some men will use the pick where another man, with more pluck and a narrower spade, would not; and in this way he would do double the work. I have never paid more than twenty-five cents a rod for digging a three-foot ditch, and the men board themselves. But where it is very stony, I am obliged to have it done by the day, and it costs a good deal more, depending on the number of stones, etc.

The Pennsylvania Hay Wagon.

The engraving on the next page shows the hay wagon generally employed in the vicinity of Philadelphia, which has some advantages over the wagons and carts in common use in other localities. The total length of the top of the body is twelve feet. The two forward corners are supplied with sharpened iron pins, 8 inches long, one of which is shown in the engraving.

and two poles hinged at the rear, which, when not in use, are turned down and lie against the sides at the bottom of the wagon. These project about 6 feet above the frame, and, expanding on the same angle with the body, are about

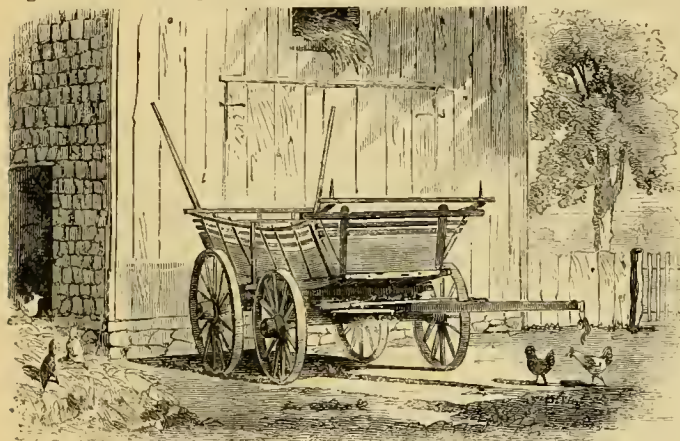


Fig. 1.—PENNSYLVANIA HAY WAGON.

8 feet apart at their tops. At each end of the body outside and near the bottom there is a windlass, shown enlarged at fig. 2, having holes through which the hay rope is passed, and other holes to receive a short hand-lever.

The hay is built up above the level of the tops of the stakes, *b, b*, and is so laid on as to considerably overhang the iron points in front, which reach so far into the compressed

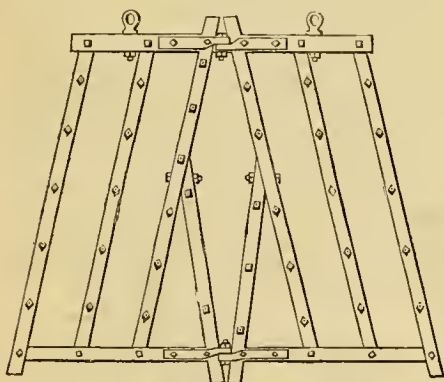


Fig. 2.—WINDLASS.

load as to prevent its shifting sideways. The half ropes are then passed over the load lengthwise, one lying near each side of the load. Their ends are secured in the holes of the windlasses and it is then drawn as tightly as possible, one lever being left in each windlass to prevent its turning back. This is an excellent vehicle for carrying either manure or sea-weed, and its body may be, with little trouble, replaced by a more convenient box for carting earth, spreading dung, etc.

A Good Home-made Harrow.

Thorough pulverization of the soil, especially upon the surface, is of vastly more importance than cultivators are generally willing to admit. If once harrowing is very useful, how does any one know that a second and third harrowing are not just as useful? The fact is, any one who



HOME-MADE HARROW.

tries it will be surprised at the obvious improvement in most crops on spots in the field subjected to extra harrowing. Some harrows will do nearly twice the work that others will without taxing the team perceptibly more. Mr. A. L. Curtis, of Little Hocking, Ohio, sends us a sketch from which the engraving is made, and

writes: "The mass of farmers still follow the old 'A'-harrow, which their ancestors for generations back used, and which will accomplish less for the amount of draft-labor than any other tool which is used by the agriculturist.

Having long felt the want of something which would do more work and do it better, I made several different kinds of harrows, and at last the one shown in the accompanying sketch. This proved a complete success. It is 4½ feet long, 4½ feet across the front end, and spreads to 6½ feet at the rear end. The frame is made of the best white oak; the bars being 3 inches wide by 2½ thick. There are 36 teeth, 8½ inches long, by ¾ths of an inch square. The hinges should be bent up about an inch high where they are bolted together, which allows the sections to fold together at the back when necessary to lift it into a wagon or upon a drag. Bolts with nuts should be used at every joint, as pins will work out. The team is attached by a common 'stretcher,' hooked into the 'eyes' in front. If farmers want a harrow which is worth three of the old style, and is not hard for the team, they may, if they please, try this plan, which is free to all, not being patented."

Do Turkeys Pay?

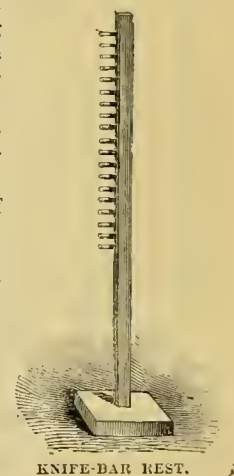
Turkeys do not pay the careless farmer, who has no place for them to lay or hatch, and no range or roost for them. The eggs get chilled, the nests are broken up by vermin, or, if the eggs hatch, the young ones are exposed to the long cold storms, and the most of them die. Fall comes, and the flock is barely doubled. This does not pay. But a good stock and careful handling pays about as well as anything on the farm. We give the balance sheet of a Connecticut farmer, to show how the thing may be done. He had 8 turkeys, from which he raised 101 birds. He sold 98 of them, weighing dressed, 1,426 lbs., at the close of the year, for 27 cents a pound, making \$385, and the remaining three he valued at \$9, making the gross proceeds of the flock, \$394. He fed them 110 bushels of corn, worth \$165, and the dressing cost \$10, making \$175. This gives \$219 profit, if we reckon the feathers and manure as an offset to the attendance. This is a handsome item in the operations of the year. It does not take a great deal of labor to raise a flock, but a little timely attention must be bestowed every day during the spring, which is the critical time with them. After the chicks are two months old, they require less care than any other kind of poultry. The nests should be sheltered, and for this an old barrel, covered with brush, is better than a more expensive and tidy covering. If you can make them think they are stealing their nests, it is all the better. By a little timely attention they can be made to lay and rear their broods near the house. The eggs should be brought into the house, to guard them from frost, and be turned half way over every day, until the hen is ready for them. Make a pen of boards about a foot high, in some sheltered sunny spot, for the young brood, and keep them there until they can fly over. Feed chopped

eggs, liver, or some fresh animal food, with the scalded hominy. Have a roost of poles in some sheltered spot, and as soon as they incline to forsake the shelter of the mother, train them to mount the poles. They will soon come home as regularly as the chickens to their roost, and much labor will be saved in looking after them. Turkeys, like other farm crops, are profitable according to the attention bestowed upon them.

Grinding Mowing Machine Knives.

Grinding mowing machine knives takes two persons, and it is tedious work at that. The farmer must generally do it himself, or see his knives spoiled, and it is often a serious tax upon his time. This has set the wits of inventors at work, and they have suggested and patented a number of ingenious devices for aiding in this necessary operation. We have examined many plans, but have seen none yet which will dis-

pen-
pend with the common grindstone, or holding the knife bar in the hands. Preferences may be in favor of the flat, or of the V-faced grindstone; a good grinder can use either, but we doubt if one side of two sections can ever be ground well at the same time. It is very important to have a rest for the bar, so that the angles of the ground surfaces on the different sections shall vary as little as possible. Mr. J. H. Burr, of County Lambton, Canada, describes to us a very simple rest, of which we think it would pay every farmer to make one or two before the mowing season. He uses a very large stone with a short crank arranged with a dripping water pot, to keep it uniformly wet. The stone has a flat face, and the short crank makes it easier to give it a rapid motion. The Rest is represented in the accompanying sketch. It is a post two inches square, and five feet high, having wooden pins set in one side, two inches apart, mortised into a two-inch plank, one foot square. The rest may be set conveniently near the stone, and the one who holds the knives can have a seat. In use it takes the weight of the bar off from the arms of the grinder. When the sections are ground on one side, the rest is shifted to the other side of the stone, and they are ground upon the other edges. The labor being so much reduced, and the rest giving so much accuracy to the grinding, Mr. B. thinks even bright boys of fourteen years can do the work very well after a little practice.



KNIFE-BAR REST.

The Outlets of Underdrains.

It is shameful to see expensive underdrains allowed to fall into disuse through neglect. During the first few years after drains are laid, there is always some silt entering at the joints, more or less according to the care with which the tiles were originally laid, and according to the character of the soil. Almost always this silt is of so light a character that any constant flow of water will keep it gradually moving towards the outlet, and prevent its accumulating to an injurious extent. But if, in any part of the drain, the tile is, to use a professional term,

"drowned," that is, if the water lies stagnant in it, this "drowned" portion will gradually accumulate silt, often sufficient in time to obstruct the passage beyond the power of the current of the drain to free it. Generally, drains being laid with a regular fall, this accident is little likely to occur, except where, from carelessness in allowing an accumulation of silt in front of the outlet, the mouth of the pipe is under water. Five minutes' work, once or twice during the winter and spring, will usually suffice to remove this accumulation, and re-establish the cleansing flow; and the work should be promptly done.

As a means of preventing this annoying and sometimes disastrous result, it is best to so arrange the outlet that its obstruction by silt is impossible, or nearly impossible. The best means for doing this is to lay the lower end of the last tile on a little wall of brick or stone masonry, built upon the rear end of a large, flat stone or brick platform, in such a manner that the water flowing from the mouth of the drain will fall clear of the wall and strike below upon the stone or platform, this in turn standing at its farther edge a little above the bottom of the ditch through which the water is discharged. By this means we prevent any interruption to the flow of the drain, except such as might result from an obstruction of the ditch below, which nothing but the grossest carelessness would ever allow to remain to an injurious extent. An engraving of an outlet of this kind was given in the March number, on page 95.

Portable Hitching Ring.

Who has not been annoyed by not being able to find a suitable place to tie a horse? In the country, perhaps, one might find trees, or buildings, or timbers; in the town, wooden sidewalks, awning posts, trees, etc., but often no hitching posts at convenient points. A valued correspondent, whose letter is unfortunately mislaid, writes that he finds an article like the one figured exceedingly convenient. This is a strong, tapering screw, with ring handle, which may with ease be firmly set in any fixed wood-work, or tree, by the roadside. This is a form of cooper's vise, which may probably be found in the hardware stores, though the common form of cooper's vise has a longer shank and too small a hole in the flat handle. A good blacksmith can easily make one.



HITCHING RING.

What Use Have We for Crows?

Farmers regard crows as their natural enemies. This is a wrong view to take, for the question may well be discussed whether crows do more harm than good. They do a great deal of good, but this is very nearly balanced at any rate, if not overbalanced, by their destruction of grain and useful birds. It becomes therefore an interesting problem, if we can not prevent the harm and make the most of their good offices. A flock of crows on a newly plowed field will destroy more white grubs and cut-worms than are seen by the farmer and his men in the course of an entire season, and where these pests are abundant in cornfields, the crows will, as the writer has repeatedly seen, go

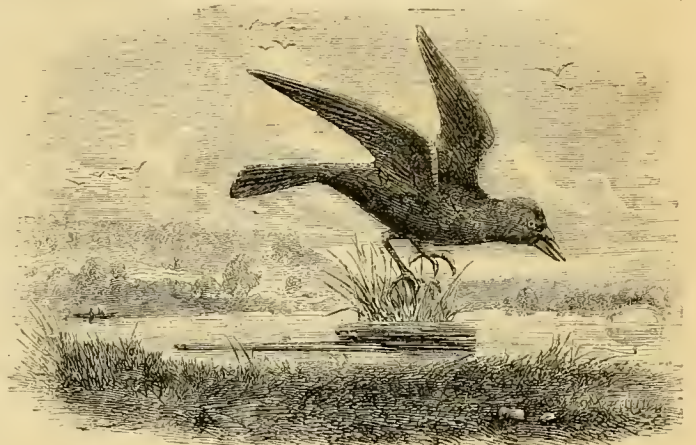
from hill to hill, stopping only at those where a wilted spear shows that grubs or cut-worms are at work. At these points they persevere until they find the little marauders, being guided apparently by the sense of smell as well as by sight. Now, it may be all very well to say a good word for the crows when they deserve it, but few are inclined to do so when they find hill after hill of corn pulled up, or see the rascals at work pulling the young wheat, or tearing open the husks of the roasting ears.

A crow is a very shy animal, and if by any means one can be trapped upon a field, or be exposed a few days while living, as if caught in a snare or trap, it is a safeguard for the season. It is no easy matter to trap a crow and yet it may be done. We illustrate a plan which is said to be very sure in its operation. A steel trap is laid in the shallow water of a pond, and a tuft of grass is placed upon the pan, and partly conceals the trap. Then the crow's natural fondness for eggs is taken advantage of in selecting the bait, and a blown egg-shell put upon a stick, which is stuck in the bottom of the pool at such a distance from the trap that to get it the crow must light upon the tuft of grass. The egg is half filled with water and seems to float only a little out of water. The jaws of the trap should be bound with tow or wrapped with cloth, to prevent them breaking the bird's legs. The trap must be frequently looked to, lest a crow being caught become exhausted, and falling over into the water be drowned. When one is taken it may be brought to the cornfield, its wings bound fast to a stick or in some way pinioned so that it cannot fly, and then tied. Its cries will attract all the crows in the vicinity, who will come down close to it, but do no damage to the corn. If a crow is pinioned on its back it is said that it will clutch and hold any crow that comes near enough. (This we have heard called a Maryland crow trap). We are assured by Mr. J. H. Mabbett, who gives us this plan of catching crows and who has practiced it with success, that during the rest of the season no crow of the neighborhood will light upon a field where a crow has been so displayed.

Earth Closets for Cows and Horses.

Much interest is now being taken in the question of the introduction of the earth closet; and it has occurred to us, (a limited experience on the subject confirming our idea,) that the application of the same principle to the cow stable, the horse stable, and, indeed, to every place where live-stock is kept, is perfectly feasible, and will be attended with the best results. Much is said in favor of the use of swamp muck in and under stables; and, indeed, too much cannot be said in its praise. But, for the consolation of those to whom muck is inaccessible, we are glad to be able to say, that, although common surface soil contains within itself probably less actual fertilizing material, yet it is even a better absorbent of the escaping gases of the manure heap, and of its soluble fertilizing ingredients. A few cart-loads of good, fertile soil, taken up during the dry season in July or August,

screened through a coal-screen, or sifted with an ash-sifter, and put away under a shed where it will not get wet, will afford a better material than muck, charcoal dust, or plaster, to be sprinkled in stables and thrown upon the accumulated droppings in a cellar or manure shed. While, probably, the value of this addition to the compost heap, in view of its absorbent qualities, will be quite as great as that of muck, the effect upon the atmosphere of the stable will be even better. In the hog-pen, the use of dry earth will accomplish equally beneficial results;

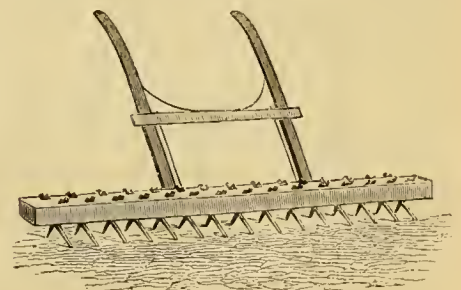


A TRAP TO CATCH A CROW.

and even the ground under the hen-roost, or the floor of the hen-house, supplied with this material in sufficient quantity to cover and absorb the droppings, the mass being forked over once or twice a week, will be productive of the most desirable effect. It will amply repay, in the increased value of the manure, the labor that it requires; while the purity of the air of the poultry-house, and the beneficial influence of this on the health of the fowls, will be greater than could be attained in any other way.

The Rhode Island Muller.

An implement used by the Rhode Island farmers, called a muller, is an excellent tool for all fine cultivation. It should follow the harrow and roller. Its effect in comminuting the smaller lumps, left by even a fine-toothed harrow, is almost equal to that of the hand-rake, while its work is both expeditious and cheap. It should be made of oak and iron. There is nothing about it that cannot be made by any common blacksmith and wheelwright; and there is no patent to prevent its general adoption. The horse is hitched by means of long traces, to the ends of the beam, which is about six feet long. The operator will soon discover that by tipping the implement forward or backward, as circumstances require, he can cut off the tops of little



RHODE ISLAND MULLER.

ridges and fill up little gullies so as to leave the ground in a very level condition, fit for the reception of even the finest seeds. For the crumbling of small lumps it may be well, when the

land is dry, to put a narrow strip of board directly in front of the rear teeth, securing it by two or three nails driven into the beam. This will mash such lumps as pass between the front teeth. The distance between each pair of teeth in the rows is about five inches, and the teeth in the rear row stand opposite the middle of the spaces between those in the front row.

How to Raise Carrots.

BY AN OLD SEED GROWER.

A light, rich, sandy loam is the best for carrots, though they will grow very well on heavier soil, if rich and well tilled. Fine old manure, well-rotted compost, or the scrapings of the barn-yard, should be used in preference to fresh and coarse manure, which will cause the roots to grow pronged and ill-shaped. Carrots had better not be sown before May, and it will do to sow quite late in the month. June I think too late to get very large roots.

It is better to plow twice: first, as soon as the ground becomes dry and warm, as deep as the soil will admit; and again, about two-thirds as deep, after the weeds have started, immediately before sowing. Prepare the ground by harrowing and back-harrowing, as directed for onions in the April number of the *Agriculturist*. Mark off the land with the reel and line, and marking rake, in 16 $\frac{1}{2}$ -inch drills, and sow the seed pretty thickly, say 2 $\frac{1}{2}$ to 3 pounds to the acre. Some carrot seed is twice the size of other samples, and some samples are very badly cleaned, so that no definite quantity can be stated; only sow so thick that there shall not be half an inch space between the seeds in the drill.

As soon as the carrots are up and have put out the third leaf, weed the rows with Comstock's Hand-Cultivator and Weeder, as directed for onions—no hand-weeding being required at this stage of the crop. When they are up three inches or so, or of suitable size to thin out, commence at one corner of the plot, (which should be as nearly square as convenient, unless the field is large,) and lay the line across the rows the whole width; adjust the marking rake to 14, 15, or 16 $\frac{1}{2}$ inches, (using the largest space when large roots are wanted,) and mark in straight lines. Lay the line again half way between the marks first made, and mark again; the cross-marks will then be 7, 7 $\frac{1}{2}$, or 8 $\frac{1}{4}$ inches apart. Then adjust the Weeder to such width as will take out all the carrots between the marks, except a few in the angles, which are very quickly thinned and weeded by hand; select the strongest plant to remain, and remove all the others.

The object of sowing thick is to make sure of a carrot in every angle. The perfect regularity of this way of thinning presents a beautiful appearance when the crop is half grown, gives very uniform sized roots, and the labor is not half that of hoeing and thinning by hand. No hoeing is needed, the Cultivator and Weeder doing the work so much quicker and better. Carrots require cultivating to keep the weeds down until the tops nearly cover the ground.

When a heavy soil has been packed by rains early in the fall, I have found great benefit in running the smallest sized subsoil lifting plow between the rows to loosen it. To do this without injury, it is necessary to use a small, well-trained horse or mule that treads narrow. When intending to use this, the rows should be 18 or 21 inches apart. When the land has lacked strength I have sown on Peruvian guano before subsoil plowing, with good effect.

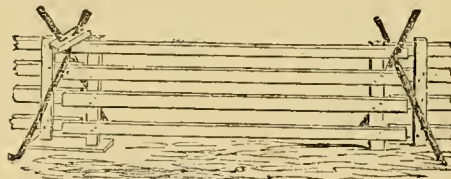
The last week in October or first in Novem-

ber, dig the carrots on a dry day, when the roots will come up clean. This may be done with spades, or by turning a furrow away from the rows with a plow so near that they can be pulled out by hand. Strip off the tops and put the roots into small heaps to dry, a day or two, in the sun, covering them with the tops at night. They must not be allowed to get wet or freeze after they are dug. Keep in long heaps, in a cool, dry cellar, secure from frost. Carrots are very apt to heat when packed away in large heaps. They should be examined occasionally, and overhauled if they begin to sweat. The yield is anywhere from 400 to 800 bushels to the acre. Price, in Connecticut, the last five years, 50 cents per bushel of 50 pounds. Always of ready sale for horses and cows.

The American Deep Long Orange Carrot is the best for general crop. Messrs. Bliss & Son have an improved variety of this, very productive, smooth, and handsome. The French Half Long Searlet, (stump-rooted Early Horn, not Early Short Horn,) is an early and very desirable sort, more delicate for the table, and will yield about as much to the acre if allowed to stand thicker in the rows. This variety is better adapted to shallow soils.

Portable Fence or Hurdle.

The accompanying figure represents a very cheap and strong hurdle, which is sufficient to turn any *ruly* animals, except hogs. The fence proposed is made of half-inch oak, or three-quarter-inch pine, or spruce, with slats four inches wide, fastened with clinch nails to six-inch cross-strips, the cross-strips being placed a foot from the ends. If the panels are more than 10 feet long, two two-inch strips should be



PORTABLE FENCE OR HURDLE.

nailed in the form of an inverted V in the center, as braces. In setting the fence up, the ends are simply lapped, and stakes are driven crossing beneath the upper rail. These will hold the fence well unless strong winds prevail, in which case a strong block, with holes bored obliquely through it, like that represented at the left of the engraving, may be placed on at the time the stakes are driven, to connect them; or they may be bound together by a withe. The cross-strips, which ought to project three to six inches below the bottom slat, should rest upon stones or blocks of wood to prevent decay; and low stakes twelve or fourteen inches long, driven into the ground at the side of each cross-strip, will hold the bottom so firmly that we think the fence would even confine pigs.

WASHING SHEEP.—Grease or yolk, with which the fleece of all sheep is more or less imbued, is a natural soap, consisting chiefly of potash and oily matter. It is not immediately soluble in water, but after the fleece is wet, and remains so for a few hours, it is in condition to be quickly washed out, bringing the dirt with it. This is, to a considerable extent, accomplished by the sheep being exposed to a rain the day before the washing. Sometimes sheep are dipped, and then shut in close sheds or

rooms over night, to keep one another warm, and washed the next day, and this secures a very thorough cleansing. Shearing may be done much earlier in the season if the sheep are not washed. Colds and snuffles ensue if the weather be not very favorable, and there is even great risk of losing valuable sheep.

The Great Poultry Show.

The week ending March 27th was devoted by the New York State Poultry Society to an exhibition of poultry and animal pets, having the use of the building known as the Empire Skating Rink, 350 feet long and 150 feet wide, the roof resting upon trestle-work arches, spanning the floor without support, and springing to a height of 70 feet. It was well lighted by windows, and by gas jets arranged beneath the arches. The arrangements for the exhibition were very complete, the preparations were ample, the room the best that could be devised, the entries unprecedented, and the quality of the fowls, etc., and the number of varieties, better and greater than ever before exhibited in this country.

From an elevated gallery a view could be had of the entire floor, showing the coops (*coup d'œil*) arranged in circles or ovals, each class by itself,—the central pyramid of startling groups of stuffed wild beasts and large dogs, surmounting the coops for pheasants, swans, and pea-fowl,—the dog show at the extreme end,—the ponies at the sides, etc. The classes attracting most notice, and indeed, most worthy of study, were the French fowls and the Asiatics. Of the former not less than three-fourths were imported, and most of the remainder were the direct progeny of imported fowls. They comprised many noble specimens—the Creve Cœur and La Fleche varieties rivaling the Brahmas and Cochins in size, and the Houdans were the recipients of endless encomiums from their breeders as hardy and excellent in every particular. No La Bresse fowls were shown. We presume none have ever been imported, but there were two coops of Guelders fowls, white and black,—for many years rare birds at our shows. (See page 175.)

The Asiatic fowls comprised Light and Dark Brahmas, Buff, Partridge and Black Cochins. Of the first there were nearly or quite sixty coops, the majority of them worthy of receiving first prizes, had there been none better. We did not learn of a single Light Brahma importation, nor of a coop the progeny of imported stock. Several trios of the finest in point of size and feathering were from the yard of Mr. Tees, of Pennsylvania, owned by Mr. S. B. Haines, of New Jersey, who is reported to have sold a trio during the exhibition for \$200. An English fancier who admired these fowls and asked the owner from which of the famous English breeders he had received his stock, was answered "We do not go to England for our Light Brahmas, Sir,"—much to his surprise. The Dark Brahmas were a select few, and either magnificent or unworthy of notice. The trio admitted to be the finest, after no little consideration by the judges, was sent to the show with others by Mr. James Cooper, of Limerick, Ireland. They were sold at the close of the show for \$235, and bought by Mr. Hicks, of Long Island. The groups of single-combed Dark and Light Brahmas contained not one even fair trio. The hens were pretty good, but the cocks very faulty in plumage and size. We think this indicates that they should hereafter be dropped from the premium lists. The great Buff Cochins rolled about in their roomy cages like balls of fluff and fat.

Here again Mr. Cooper, with close competition, bore off the palm, and the trio sold afterwards for \$315 to the Messrs. Hodgson of Long Island. The best coops of Dark Brahmans and Cochins were of recent importation. They are rapidly rising in favor, from fashion and from real merit.

The Society's medals and diplomas are open to the competition of the whole world. Mr. James Cooper, already mentioned, was the only foreign contributor. He showed nine coops of fowls, which were sold at the close of the exhibition with a large number of other fowls and animals. The good prices brought by these, and which are likely to be given for really fine foreign fowls, should induce other breeders to follow Mr. Cooper's example. Mr. C's. Gray Dorkings were very fine, his Creve Cœurs and La Fleche hard to beat; Black Spanish, above the average; his Sultans, the only ones shown; and his Toulouse Geese, large and fine.

The beautiful Hamburgs were exhibited in all their varieties—Pencilled and Spangled, of Gold and of Silver, Black and White. Polish fowls were shown also in goodly numbers, of all allowable plumage, except white, and certainly were worthy the admiration they received.

Black Spanish fowls, with all the style and pomp of Castilian nobles, made a splendid show, though the frost had touched their combs a little, and reddened their faces.

The Bantams challenged the admiration of all.

The Dorkings, White and Gray, are a distinct English breed and as economical producers of flesh of superior quality have few equals. There was a very instructive show of these birds, including the largest White Dorkings we have ever seen. At the same table Leghorns and White Spanish were grouped and shown in considerable numbers, and some of them of great beauty.

Turning from these breeds of homely utility or simple beauty of form and plumage, we come to the Game Fowls, as we turn from cart and carriage horses, fancy saddle horses and ponies, to the Arabian or the thoroughbred. The largest exhibitor, Mr. R. Huntington, of New York, won a victory for his stock quite as marked as if it had been more sharply contested; for the very fact that his birds were present seems to have been enough to have kept the New York "sports" and their birds out of the arena. The game-cock exhibits all the traits and points of a cock in perfection. He is of good size, firm fleshed, close feathered, small boned, neat, and trim. The amount of meat compared with the weight of the carcass is greater than that borne by any other breed of fowls. He fattens easily, and the flesh is white, tender, and high flavored. The game cross ennobles all the great flesh-producing breeds, especially the Asiatics, and the finest Christmas market chickens and capons are thus produced. The hens are fair layers, excellent setters, and brave mothers. Aside, therefore, from his employment in the cock-pit, the game fowl has very high claims upon breeders. The show was rich in instructive varieties. Several coops were importations made a year or two since, and held at high figures since the courage and good qualities of their stock have been put to the test of battle.

The great native American fowl, the Turkey, was shown in great variety and beauty. Wild and Bronze, Black, White, Gray, and Buff, they vied with each other in strutting and puffing, except the timorous wild ones, which vainly tried the bars of their cages for a place of escape. The heaviest Bronze turkey weighed 36 pounds, but is said to have weighed 43 in December, which we do not doubt.

There were several coops of Guinea fowls, only one of which was of the old, original, beautiful, uniform slate color, covered with nearly spots. Many were disfigured with white.

There were Geese in considerable numbers and of notable excellence in a few cases. The show of ducks was better, but those two most useful breeds, the Aylesbury and Rouen, made up the greater part of it in merit and value.

The Pigeon show was not what it would have been at any other season, owing to the justifiable refusal of fanciers to disturb the birds in the height of the breeding season. Numerous pens of lop-eared rabbits were shown, some of which for size, perfection of ears and uniformity of lop, fullness of dewlap, and other valued points, were very meritorious. The dogs and ponies formed besides a very attractive feature.

The unprecedented success of this exhibition was due to the enthusiastic efforts of a few individuals. The high prices our breeders are ready and willing to pay for first-class fowls and the liberality of the public towards the Society convince us that the interest taken in the subject is not temporary but growing, and we anticipate a brilliant future for the Society and its shows. It is too much to expect that no mistakes should be made, but as experience accumulates, no doubt there will be less reason for criticism. The time of holding the exhibition operated against the show, as few breeders were willing to disturb choice fowls in the midst of their breeding. It seemed hardly fair to insist upon taking the weights of fowls which had to be shipped on Friday to be received on Saturday in order to be exhibited on Monday at 10 o'clock, and which were examined by the judges on Tuesday afternoon. This will account for the fact that no weights can be published. It was, besides, a grave error that the names of exhibitors were not uniformly placed upon the coops; the public were thus kept in ignorance of the breeders of the fowls, and the fair failed in good part to accomplish the good it might. Another great mistake was in not announcing the awards until the afternoon of the last day—thus again depriving the public of the privilege of examining the prize fowls. The decisions of the Judges in many classes may, and will, no doubt, be sharply criticized. The bad effect of an indiscreet award is in a great measure counteracted by the free discussion of it, which takes place after the ribbons are distributed.

Very Useful Fowls.

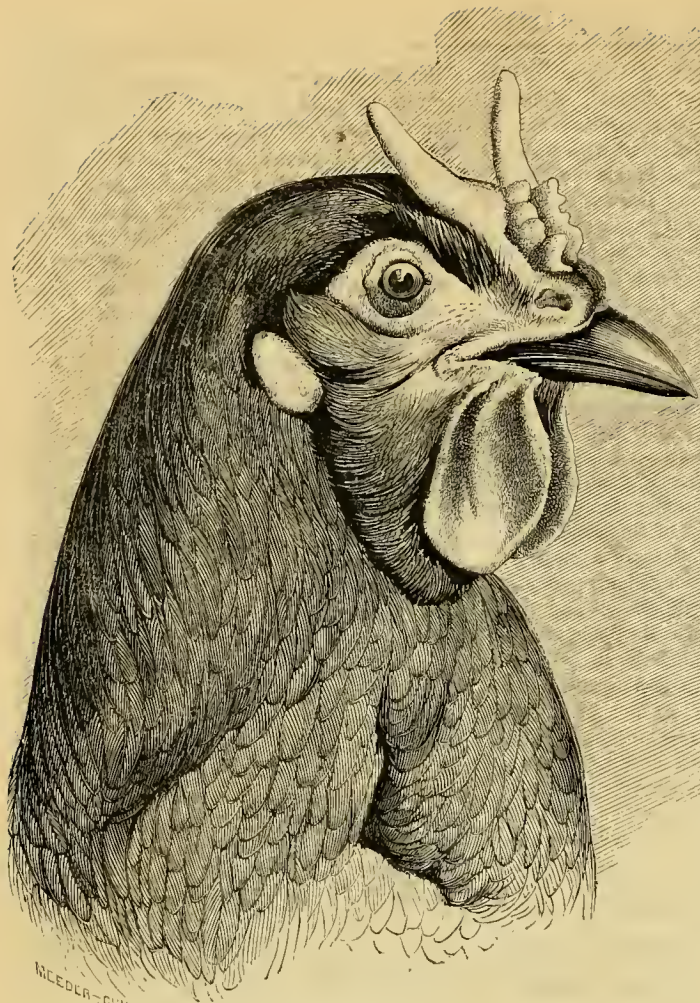
The very great value of the feathered farm stock of the country, and the extraordinary efforts now made to improve it and increase its worth, warrant us in devoting considerable space this month to the late poultry fair, and the general subject. The introduction of the Asiatic breeds is clearly within the memory of the majority of poultry breeders now upon the stage. The effect upon the stock of the country, though at first deprecated, has been eminently salutary. The Shanghais and Chittagongs certainly gave size and early maturity, as well as increased hardiness, to our common barn-door fowls; and there is scarcely a farm-yard in the country with the stock of which this blood did not mingle. The Brahmans and Cochins of the present day retain the good characteristics of their not so well-bred relatives, now rarely seen or heard of, and their effect when mingled with common fowls is more striking and more beneficial. Within a few years, English breeders of poultry have discovered the great excellences

of the French breeds. They have been extensively introduced into Great Britain, and, within three or four years, have been known here.

Three breeds have often been discussed in the *Agriculturist*, namely; the Creve Cœurs, Houdans, and La Fleche. The La Bresse is another breed, without marked peculiarities of plumage, but otherwise much like the "Creves" and La Fleche. The Guelders, or Guelderland fowls, in some respects are strikingly like the La Fleche, but are not so large. They, too, are classed as French fowls, though longer known both to English and American breeders. All these breeds have double (not "rose") combs, either top-knots or a tendency to crests, and wide, open nostrils connected by a horny ridge, frequently flattened into a spoon-shaped affair on the top of the bill. A little prong or branching bit of comb often appears in front of this, giving a very peculiar expression to the fowl. The Guelders have next to no comb at all, there being merely two small points, invisible at a short distance. The cocks have immense wattles, and both cocks and hens red ear-lobes, and a few erect feathers forming a crest, scarcely an eighth of an inch high. They are of medium size, of several colors, and feather-legged. The La Fleche have two, rarely branching, spikes of combs, a sprig of coral appearing in front of the nostrils. They have often a slight crest, and always well developed, white ear-lobes. They are of a glossy black color and large size, but rather long-legged, firm, and solid. The Houdans have combs which branch more or less, like the antlers of a stag, or are palmated, which is a common form. An idea of this form is gained by placing the open hands together, wrist to wrist, as one does to catch a ball. They have moderately full crests or top-knots, like the well-known Polish fowls, which have similar, but smaller combs. The Houdans have full muffs or beards, irregularly spangled or blotched, black and white plumage, and the general effect is quite comical. They are above medium size, five-toed, very active and hardy, yet quiet in disposition. Creve Cœurs are like Houdans in the garniture of their heads, but have more of a crest. They are black in color of plumage, of very large size, short-legged, and are remarkably broad, deep, and solid fowls.

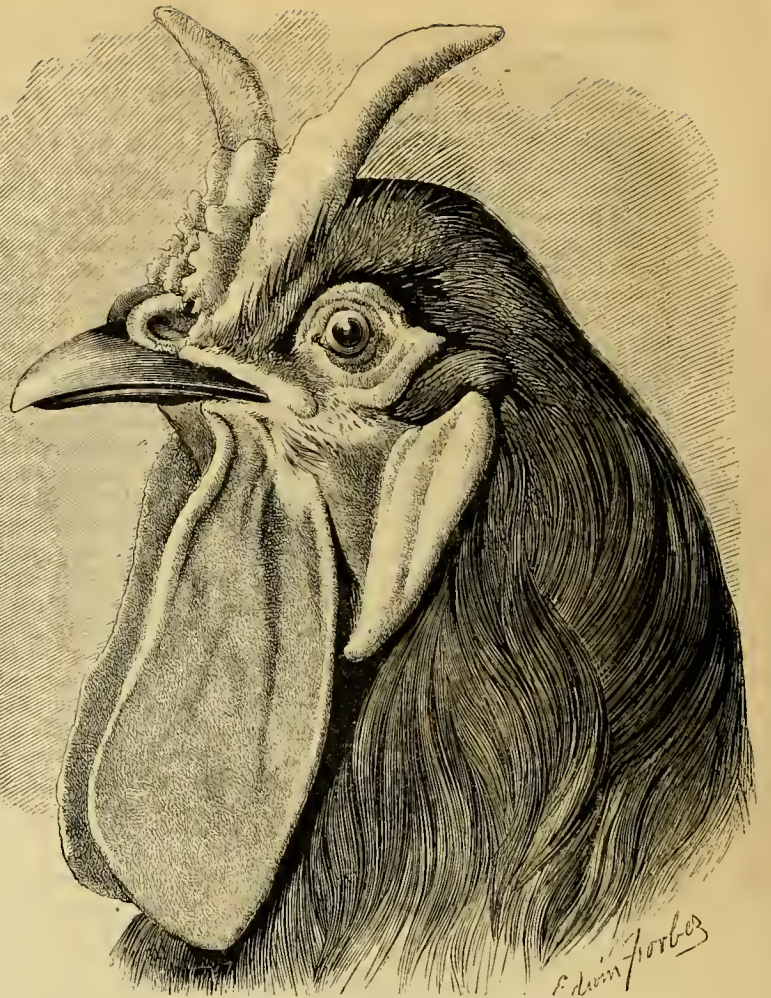
All these breeds are persistent layers, and non-setters. They all have excellent flesh, and the young mature early. The Creve Cœurs, La Fleche, and La Bresse, are famous for fattening heavily and quickly. They prove, however, rather delicate in a cold climate. The Houdan nearly equals the others in size, and is very hardy, laying freely even in the winter, and is subject to but few diseases. This will, we think, become at once a favorite fowl with the Northern farmer, and we anticipate also that the Creves and La Fleche will be equally valued throughout the cotton belt, and will rapidly become acclimated at the North. We have, in fact, proof of this in the stock of Mr. Jas. P. Swain, which he imported as "French layers" some 20 years ago. These are doubtless Creve-Cœurs, though of less size, retaining their good points, and are as hardy as common dunghills.

The pictures on the following page are accurate portraits of the heads of some French fowls imported for the *Agriculturist* premiums, and among the finest birds at the late show. The Dark Brahma pictures were taken from the trio sent out by Mr. Cooper, of Limerick, which sold for \$235. The head of the cock is a little faulty in having wattles much longer than the ear-lobes, but he was an admirable bird.



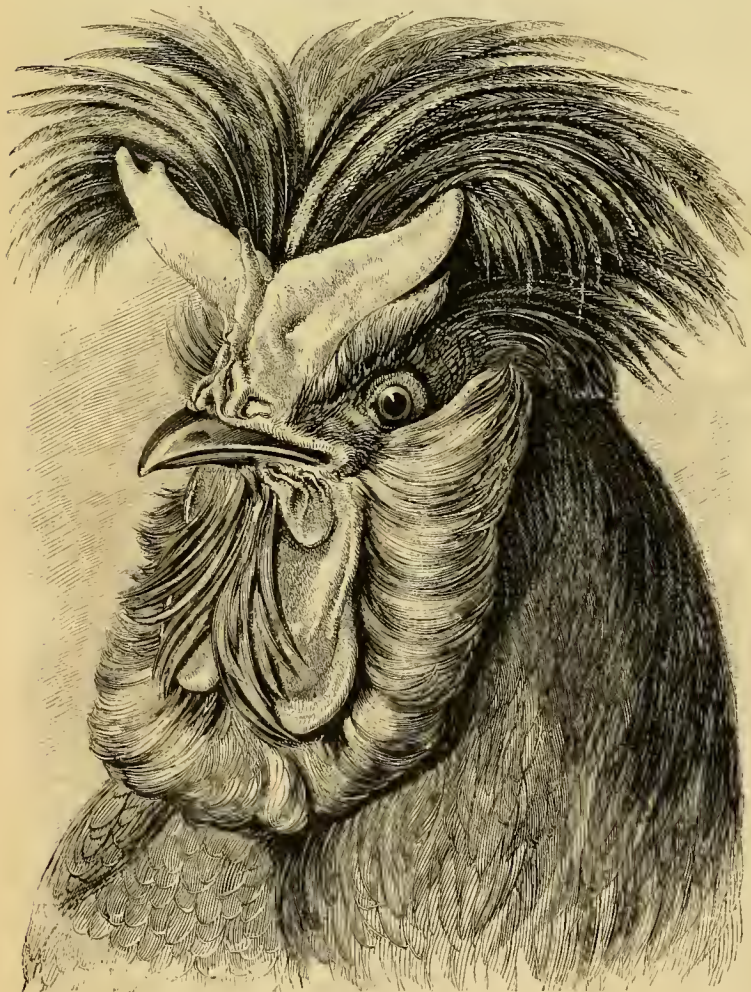
WEDER-CRUBB SC

LA FLECHE HEN.



Edwin Forbes

LA FLECHE COCK.



CREVE CŒUR COCK.



CREVE CŒUR HEN.

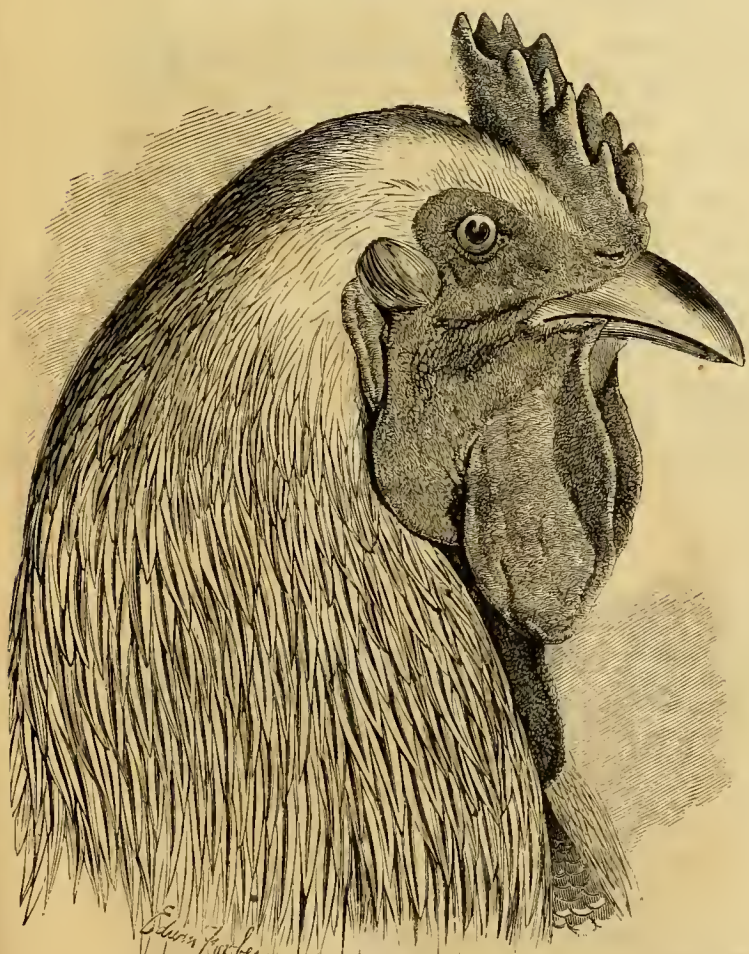
[COPYRIGHT SECURED.]



HOUDAN HEN.



HOUDAN COCK.



DARK BRAHMA COCK.



DARK BRAHMA HEN.

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Edwin Forbes

The Art of Grafting.

Those whose knowledge of grafting is confined to the old and prevailing practice of cleft-grafting would be surprised at a work of 320 pages devoted solely to this method of propagation. Mr. Charles Baltet, Horticulturist of Troyes, France, has published the Art of Grafting (*L'Art de Greffer*), in which forty-seven dif-

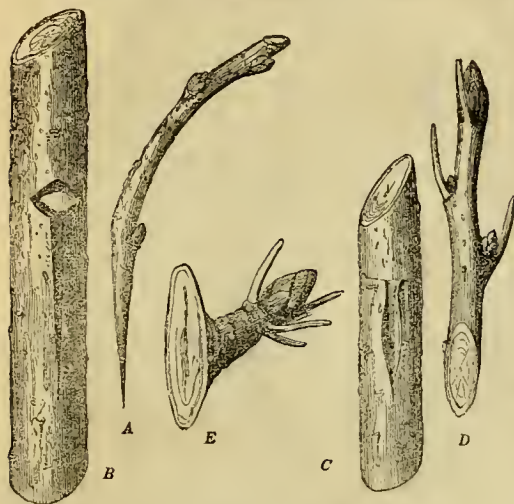


Fig. 1.—FORMS OF SIDE-GRAFTING.

ferent kinds of grafting (including budding) are explained, and generally illustrated by engravings. Some of these methods are only suited to particular varieties of trees, while others have a more wide application. The success of grafting of all kinds—as far as the mechanical part is concerned,—consists in bringing the growing parts into close contact. The growth of the stem (in diameter, at least) takes place between the bark and the wood. It is here we find the "pulp" or cambium layer, as the newly forming wood is called, and the directions given, that the bark of the stock and cion shall accurately meet, really mean that the newly forming wood of the stock shall be in close contact with that of the cion. In cleft-grafting, a limb or the top of a young tree is sacrificed, a matter of no importance, when we wish to change the tree or limb entirely; but if the object be to simply test a variety of fruit, it is then desirable to be able to do it without disfiguring the tree. On page 138, last month, we gave M. Sisley's method of

ture are practised to as great an extent as they are neglected with us, fruit trees are trained as espaliers, cordons, pyramids, etc., with a care which very few of our cultivators are disposed to give. In trees of this kind, regularity is essential, and if a branch does not appear in the place where it is needed, one is put there. Some of the forms of side-grafting may be used for this purpose. Three forms of side-grafting are shown in figure 1, which is from Warder's American Pomology. A is a curved cion, selected in order that the branch shall not make too sharp an angle with the tree; it is whittled down at its lower end, or chamfered, on one side only, and has a bud opposite the cut portion. The cion thus prepared may be introduced under the bark of the stock, in which a T incision is made, as in C; or the incision may be as in B, in which a notch is cut in the stock down to the wood, above the longitudinal incision. At D is another form of cion, with a terminal bud; the cut at the lower end should be longer than is shown in the engraving. A fruit bud, E, is sometimes inserted by amateurs who wish to test a variety at once. These forms of grafting can only be done after the leaves have started, and the bark will "run"; they are to be bound and covered with waxed cloth in the usual way. A very simple form of side-

grafting is that in which the cion is cut at the base to a thin wedge, and inserted in an incision made downward into the wood of the stock, as in figure 2. This is used with evergreens, camellias, etc., the incision being more or less oblique, as experience has shown the particular plant to require. M. Baltet gives another plan for restoring branches where they are needed, which he calls a variety of the inlaid graft (*greffe en placage*). We give M. B.'s figure. The cion is prepared as in A, fig. 3. A strip of bark is removed from the stock B, and the sap-wood cut away sufficiently to allow the bevel



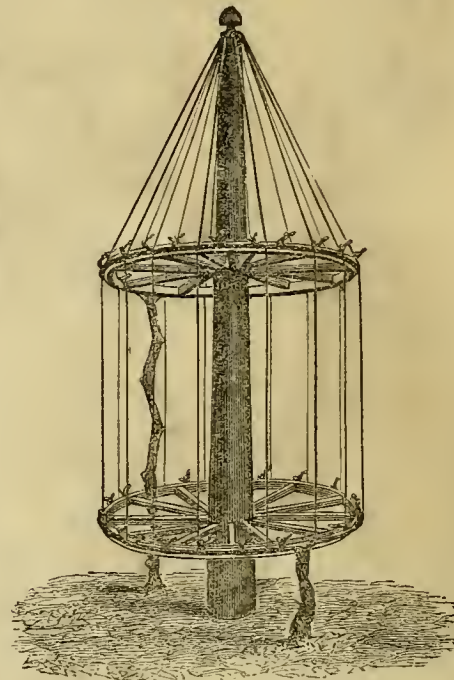
Fig. 2.

of the cion to exactly fit; the binding is shown in C, the parts being properly covered with wax. Above the insertions incisions are made to check the flow of sap and throw it into the grafts. Grafting of this kind needs the most accurate fitting, and an implement is used consisting of two blades, which are brought together or separated by a screw. This serves to measure the width of the cion as well as to mark the incision in the bark.

A Circular Grape Trellis.

Those who understand the laws governing the growth of the vine can train it in a great variety of ways. A subscriber in Manchester, N. H., writes as follows: "I send you a sketch of a trellis that I have used in my garden with satisfactory results, both as an ornament and support for the vine. It is not patented, and any one can make it who chooses, as follows: Procure a post long enough to stand 7½ or 8 feet out of the ground; if turned, with an ornament at the top, it will look all the better. Eighteen inches above the ground, set in six arms to support a rim four inches deep, and ten feet in circumference; halve the ends of the arms on to the under side of the rim, and fasten with nails or screws. Three feet above this rim, put another just like it; put in some eyes made of wire, at the top of

the post, say twelve or fourteen. Divide the rims into as many spaces as you have put in eyes, and stretch some No. 16 galvanized wire from the eye to the lower rim, taking a turn round a nail in the edge of the top one, and fasten it securely at the bottom. Give it one

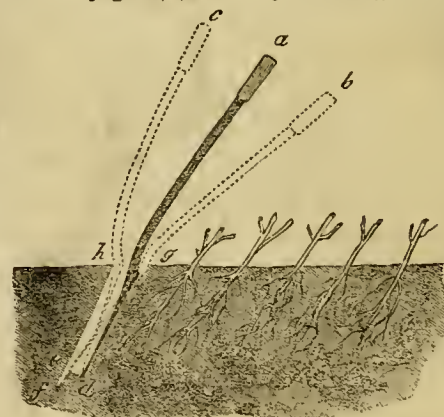


CIRCULAR GRAPE TRELLIS.

or two coats of paint, and it is ready for the vine. Plant two vines under or near the trellis and grow them with double arms. Train the arms, one pair around the upper and one around the lower rim. Allow two fruit canes, after the first year of fruiting, to each wire; keep them tied to the wires, and by midsummer the trellis will be covered and will look very pretty, especially if you get near enough to see the rich clusters of fruit. This gives the same amount of vine as on a straight trellis ten feet long and two tiers high, and it can be used in many places where other kinds can not."

Hedge Planting on the Prairies.

"H. N. P.," Bloomington, Ill., writes: "Your correspondent 'G. N. M.' has given good advice on page 99, (*March Agriculturist*), but let



METHOD OF SETTING A HEDGE.

me add a suggestion. I can best illustrate the practice of our most rapid hedge planters by reference to the sketch. First insert the spade in the line of a—d, then bearing down or backward on the handle, bring it to b, which will throw the point upward and forward toward e, then a little pressure of the foot will push the

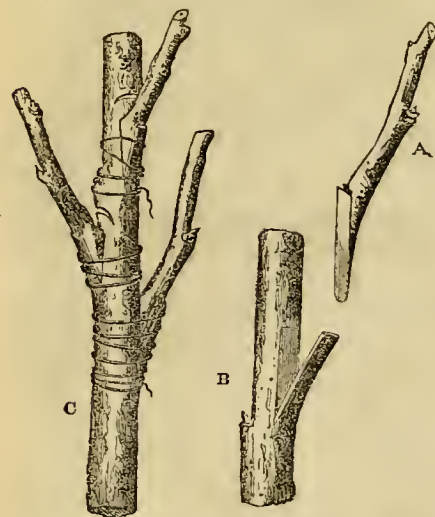


Fig. 3.—INLAID GRAFTING.

accomplishing this by grafting in the forks of the branches; and there are several methods of side-grafting which accomplish the same end. In Europe, where the refinements of horticul-

point of the spade down toward *f*, when the handle should be raised to *c*; thus a space is left behind the spade large enough for the set to be put in quickly, and without danger of breaking off the fibrous or branching roots, or of drawing the plant out with the spade, as often happens without this preparation. It is but the work of an instant, and is a great saving of time in the end. By working forward instead of backward, the 'tramping' is all done as the men pass along performing their work."

A Bracket for Garden Purposes.

Many have doubtless been puzzled how to manage when they wished to train a vine or climber to the house or fence. To fasten the plant directly to the building is not good for either, and to make a projecting lattice that shall be both strong and neat is troublesome. Mr. C. Marvin, Port Jervis, N. Y., sends us a sample of a bracket which he has found useful to support horizontal slats to which plants may be trained. With a few brackets, and slats, and some wires, the object may be accomplished neatly and efficiently. Mr. M. says: "I cut the pattern of the bracket (fig. 1) for the moulder, and he cast, drilled, and coated them at the small sum of six cents each. The time and trouble of putting up is trifling. The first two brackets I screw on the house eight feet apart, the third one seven feet, nine inches, (to allow for the lapping of the slats); the pine slat, which slips into the bracket, is one inch thick, by two



Fig. 1.

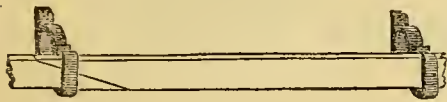


Fig. 2.—BRACKETS AND SLAT.

inches wide, and sixteen feet long; the ends of the slats I cut wedge-shaped where they are to be joined, and make the lap inside of the bracket, which holds the ends securely, and gives the appearance of one continuous slat, as shown in fig. 2." The length of the bracket is 5 1/4 inches; it is covered with a black varnish, to prevent rusting.

A Bit of Rock-work.

Artificial rock-work is generally out of place and out of taste. If rock-work can be introduced where such a formation might naturally be expected, the effect is pleasing; but a mass of stones built up on a lawn is seldom anything but a rubbish heap. Others differ in opinion, but we, nevertheless, express our own. The writer, in preparing a piece of ground for a flower border, discovered a most disagreeable geological fact in the shape of a large rock, too near the surface for anything to grow above it; digging was impracticable, as it was an outcrop of the general underpinning, and blasting could not be resorted to for fear of injury to established plants. The remedy was—more rocks; as nature had determined that a rock should be just there, we determined to help her, and made a pile of rocks which is called a rock-work, though the principal care was devoted to making it strong, and securing a plenty of cavities or "pockets" for soil. It is not a very artistic heap of rocks and soil, but it affords more pleasure than if the space were a nice deep border. The very top is crowned with the Alpine Rock-Creeps, which was described last month. From a

shelf, a little lower down, a Money-wort hangs its slender branches; on the other side, the *Linaria Cymbalaria* flourishes finely. Our graceful native Columbine has a nook, House-leeks, Stone-crops, Prickly Pears, and many other things, find a foothold here and there, and over all a plenty of European Ivy spreads its dark green foliage. To enliven the whole, when warm weather comes, some Portulaccas and dwarf Nasturtiums are put with the rest, and their flowers blaze away more brilliantly than they would in a more promising spot. All the "ribbon" borders and beds that were ever planted would not be accepted in exchange for this rude little bit of rocks. Now, while this rock-work was made in a border from sheer necessity, we do not advise our readers to follow the example unless under similar circumstances, but if there are nooks and corners in their grounds where rocks will not appear out of place, they will find that many plants will seem to flourish better, or, at any rate, show to better advantage, on a rock-work than elsewhere. In building up, use stones that are all alike, and lay them as naturally as possible, taking care to have a sufficient number of pockets or cavities to hold the soil necessary to sustain the plants.

Grape Trellises.

For gardens and small vineyards there is nothing in the way of a trellis so neat and convenient as the one proposed by Mr. Fuller in his *Grape Culturist*, in which upright wires are stretched from an upper to a lower bar, nailed to posts at the desired distance apart. This trellis we have already figured. In large vineyards, where there must be the greatest economy of labor, horizontal wires are adopted. The only advantage they have over the upright ones is the cheapness with which they can be put up. The wires are stretched between strong posts at the ends of the rows of the vineyard, and supported at intervals by stakes. It will be seen that the two principal difficulties in putting up a trellis are, to properly stretch the wires at the time of putting them up, and to avoid the troubles that must result from the effects of heat and cold. If the wires are put up in spring and tightly stretched, the contraction caused by the cold in winter will either break them or pull the post out of the perpendicular. Several contrivances have been proposed for overcoming the difficulties of expansion and contraction.

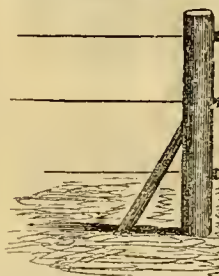


Fig. 1.—POST AND BRACE.

Before alluding to these we will give the plan of trellising adopted at Hammondsport, N. Y., which is both simple and efficient. The end posts of the rows are braced as shown in fig. 1, the upper end of the brace resting in a notch in the post, and its lower end against a stone buried for the purpose. The coils of wire are placed upon a reel, fig. 2, which revolves on an upright axis fixed to a small bench. The coils are dropped upon the reel and kept separate by means of sticks, which are passed through holes made in the reel. The reel being placed at one end of the row, a man takes the ends of the three wires and walks towards the other end, where he makes them fast to the post at the proper distances, by a turn around the post, and a twisting of the end of the wire upon

itself. The man at the reel cuts the wire at the proper length, passes the end of it through an

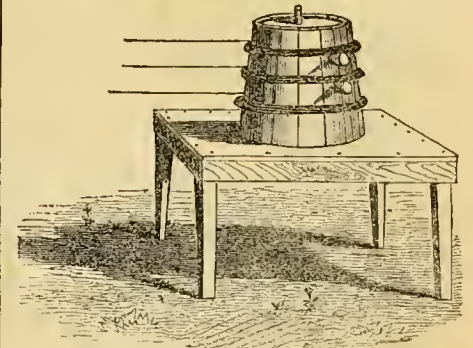


Fig. 2.—REEL FOR WIRE.

auger hole in the post, and begins to stretch. The stretching is done by means of a small windlass, a stick of hard wood about two feet long, with a small hole in the center, and arms at each end, fig. 3. The end of the wire which comes through the hole in the post is put through the hole in the windlass; on turning the windlass by the arms, its body resting against the post, the slack of the wire is taken up. The man

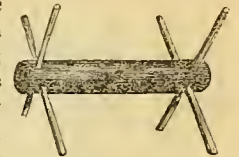


Fig. 3.—WINDLASS.

who has carried out the wires, on his way back, sees that all is right, and when they are sufficiently stretched, he drives a strong, wooden pin in the hole through which the wire passes, and, for additional security, a turn or two may be taken around the projecting end of the pin. The trouble from contraction by cold is avoided

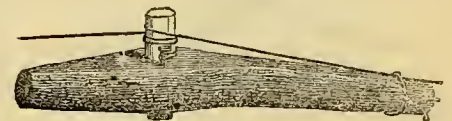


Fig. 4.—LEYRISSEON'S STRETCHER.

by the very simple expedient of knocking away the brace, and allowing the posts to yield to the tension. This rather rough method of overcoming all trouble from contraction of the wires has been found perfectly practicable at Hammondsport, on thousands of acres.—The French have several more or less complicated *raidisseurs* for accomplishing the same end. One of these is a small windlass to be turned by a key, and which is held from turning back by a catch which falls into a ratch-wheel. One of these is attached to each wire. A lever attachment to the wires has been patented, as noticed in the "basket," by Mr. T. G. Youmans. One of the



Fig. 5.—NATURAL STRETCHER.

simplest things of this kind we have seen is that proposed by M. Leyrisson, and figured in the *Revue Horticole*. The shape of the apparatus is shown in fig. 4; it consists of a curved piece of wood with a strong pin inserted in it. Near the pin a nail is driven. It will be seen that by catching the wire between the pin and nail, and turning, the wire will be wound upon the pin. When the wire is sufficiently stretched, the long arm is caught in a wire or willow ring which slides upon the horizontal wire. In fig. 5, one of our associates shows how *raidisseurs*, or stretchers, can be cut ready formed, and without the trouble of inserting a pin

Some Early Wild Flowers.

In this country, at the North at least, we cannot follow the example of our English ancestors, and celebrate May-day as a floral festival. We



RUE ANEMONE.—(*Thalictrum anemonoides*.)

may console ourselves with the thought that the custom had a heathen origin, as it perpetuates the ceremonials in honor of the Latin goddess Flora. The few attempts we have seen at "Maying" in our fickle climate have been characterized by a general paucity of flowers, and chilliness of person. Still, the true lover of flowers can find enough to interest him in a May-day walk, even if the day be chilly, and anything but festive. There are many early flowers to be found, which, if not gay enough for garlands, are well worth the seeking. Wherever the Trailing Arbutus, or May-flower, (*Epigaea*) is found, there is no lack of either beauty or fragrance. Unfortunately this gem of our wood-sides only grows here and there. Some violets are to be found, but provokingly without the odor which every one associates with the violet. On the exposed hill-sides the Early Saxifrage and the little Plantain-leaved Everlasting have been in bloom for some time, as has the Early Crowfoot, or Buttercup. Some of the Cresses grow on the banks of the streams, and in the moist woods we find the pure white flowers of the Bloodroot, the delicately veined Spring Beauty, the oddly shaped Dutchman's Breeches, and its closely related Squirrel Corn. But it is not our intention to give a list of all the plants to be found at this time, as it would not be possible to give one which would be other than local. One very common spring flower has been sent to us so often for a name, that we give an engraving of it—the Rue Anemone, *Thalictrum anemonoides*. It is often found in

company with the Wind-flower, *Anemone nemorosa*, which it somewhat resembles. The engraving (after Sprague,) is so life-like, that the plant needs no description. It is not a true Anemone, but a *Thalictrum*, a name which is an old one, the meaning of which is not understood. The specific name, *Anemonoides*, means resembling the Anemone. The difference between *Thalictrum* and *Anemone* is seen when the flower has fallen, and the seed-like fruits are formed. In the first case they are little ribbed cylinders, and in the second, they are flattened, with a hooked beak. Another pretty flower of early spring is found in rocky woods,—the Violet Wood-Sorrel, *Oxalis violacea*. The slender stems are sent up from scaly bulbs, and bear several delicate violet-colored flowers. The flowers of early spring have a charming delicacy, which is wanting in most of the later ones, and they are welcomed with a feeling that those which come later fail to excite.

Improvement in the Gladiolus.

Since florists have turned their attention to the Gladiolus, a marked improvement in the form and color, as well as the texture of the flower, is manifest. Instead of the one-sided flower with the petals all pointed, we have now flowers quite symmetrical in shape, and of great substance. The engraving shows a fine flower taken from a specimen in the magnificent collection of Mr. Geo. Such, South Amboy, N. J., who has been very successful in producing new varieties from seed. The Gladiolus is one of the plants that need to be popularized, for we seldom see it in the gardens of the people at large. Good bulbs can be bought for \$2.00 a dozen, but the new and choicest varieties sell for 50 cents or more, each. They will flourish in any good garden soil, and all the better if it is rich and light. The bulbs may be planted this month or next, and when the leaves begin to wither in autumn they are taken up and kept in a cool place, free from frost. The old bulb produces one or more new ones, according to the variety. To those quite unacquainted with the Gladiolus it may be well to say that single flowers, similar to that in the engraving, are borne upon a stem to the number of twenty or



REGULARLY FORMED GLADIOLUS.

more. They vary in color, from white and yellow, to scarlet and the most brilliant crimson, and are variously marked. Those known as the Hybrid Gladioluses (*Gladiolus Gandavensis*), are the finest, and are the ones referred to. They are kept by florists and seedsmen.

Trouble with Cabbages.

The cabbage plant has many enemies; those which are particularly annoying in the early stages of its existence are the small white maggot, at the root of the seedling, and the cut-



VIOLET WOOD-SORREL.—(*Oxalis violacea*.)

worm, after the plant has been set out. Several small flies of the genus *Anthomyia* infest the radish, turnip, and other plants of the same family, as well as the cabbage. The troublesome "maggots" which infest the roots of these plants are the larvæ of these insects. They sometimes attack a seed-bed of cabbages in such numbers as to render all of the plants worthless. We have already given the proposed remedies, such as dusting with lime, ashes, etc. The latest suggestion we have seen is to grow the seedling plants in boxes, elevated six or eight feet above the ground. It is said that this places the plants above the reach of the parent insect. The cut-worm—which includes the grubs of several distinct insects—is often destructive in the garden or field. It works in the night, stripping off the leaves or cutting the stems square across, and retires to its hole during the day. Hunting the grub, digging it out, and killing, have been the only sure remedies. White, in his Gardening for the South, states that an old negro gardener told him that the cut-worms would not attack cabbages that were planted in trenches six inches deep, and that he practised upon the suggestion with success. It is a very simple remedy, and is worthy of a trial by those living in localities where the crops are liable to be injured by cut-worms.

SPENT HOPS.—The waste hops from the breweries are an excellent fertilizer. From some experience in their use, we estimate their value to be equal—cord for cord—to stable manure.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Insects and Flowers.

Some odd things have been ingeniously worked into the forms of flowers. We have seen flowers



FLOWERS MADE OF INSECTS' WINGS.

made of shells, feathers, seeds, etc., and now one of our friends has made them of insects' wings. He probably had the notion that a great many flowers are destroyed by insects, and it is only fair that insects should be used to make flowers. The engraving shows the grotesque appearance of these imitations. The flower made from butterflies' wings looks something like a strangely shaped orchid, while the other, made of the wing-cases of beetles, presents a more regular form. In both flowers the foundation is a small disk of card-board, to which the wings are gummed. Butterflies' wings should be carefully handled with a delicate pair of forceps or tweezers, to prevent injuring them.

Experience in Soap-making.

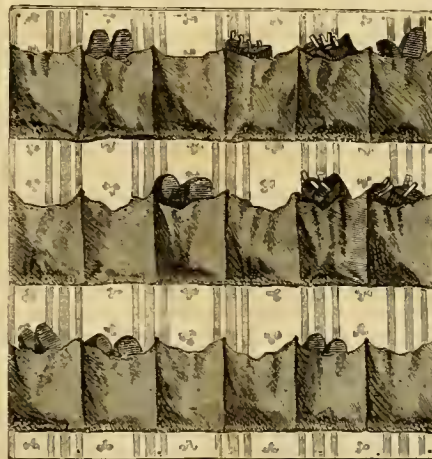
BY MRS. M. L. GAGE, ROSS CO., OHIO.

Whatever may be said about the advantages of selling ashes and grease and buying soap, it is best for most living in a farming community to make their own soap, and in a new country there is no alternative. I came into Ohio from Eastern Mass., on one of the first through Ohio canal-boats. Every one, of course, practised soap-making in the spring, and I feared they would think little of the person who could not do what they had always done, and so was unwilling to ask questions, and thus expose my ignorance. My husband said it was a pity that though I had studied chemistry and he had been through college we could not make soap. I knew, however, that book-keeping and cooking were two things; so I sent for information to some of my aunts at the East, who I knew made soap, and was kindly referred back to my neighbors. I wanted a rule, but I could not get one. I got hints, blundered, sometimes had "luck," and sometimes not, until I had experience enough to make a rule for myself. The fact is, there is a great deal of good soap made, and uniformly too, for which the makers have a rule, but do not know it. They burn the same kind of wood, kill the same number of hogs, and make the soap in the same kettles, year after year, and it comes out right. I start the lye to boiling, and then while boiling, if the lye is not strong enough to eat the feather off a quill, boil it down until it is. When it will just eat the feather, let the kettle be a little more than one-third full of lye, and put in grease, skins of the hogs, bacon rinds, meat fryings, and the like, until the kettle is about two-thirds full. The kettle must not be full, for

with the least bit too much fire, over the soap goes. It is better to put in a little less than the necessary amount of grease. Lye and grease combine in certain proportions, but pass the limit, and no amount of boiling will take up an excess of grease. It will remain on top, hot or cold, and will be very troublesome; whereas a little too much lye will sink to the bottom when the soap comes. If the proportions are good, a little fire only is required to keep it boiling, and in a few hours it is done. Then take a bucket of weak lye, and let it boil up with the soap once. This will not disturb the already made soap, but will wash the dirt out that was in the grease, and with it settle to the bottom. When the soap is cold it can be cut out in cakes. Exposure to the air will soften it down until it is of about the consistence of mush, and little darker, growing fairer and fairer. Some, instead of putting in lye to wash the dirt out of the soap, put in salt and water. The soap thus made is whiter, but is apt to be too stiff to use easily in the wash-tub. It makes excellent ball soap for washing dirty hands. I take some weaker lye and the clean part of that which is left in the bottom of the soap kettles, and enough to half fill one of the kettles or more, setting it in some convenient place outdoors. I put a stick of wood on the north side of the top of the kettle, lay on some boards, making a roof which is easily managed to shed rain, and lay another stick on top to keep the roof in place. By lifting one of the boards a little, I can put in from time to time whatever soap-fat is gathered in the family through the summer. Whenever the sun shines, I remove the cover and stir the lye. I facilitate the business a little in this way, and I have by fall a half kettle of decent soap, and no trouble with soap-fat in hot weather.

Bags for Shoes and Slippers.

The suggestions made in regard to boxes for boots and shoes have called out several letters, all essentially the same as that of "G. R. S.," which we here give: "My arrangement in the shoe line is a flat foundation tacked around the edges to the inside of the closet door in my bedroom. It contains 18 pockets (as shown in the figure), each of which will hold a pair of thin shoes or packages of laces; for thick shoes a pocket each is required. This foundation is 27 inches deep by 24 inches wide, with a facing around the edge underneath, to give strength. For the pockets, take three strips, 7 inches wide by 42 inches long, and hem at top; a cord is sewn in the lower part of each to gather it to the size of the back. Sew each strip tightly across the back, equidistant, commencing at the lower edge. Each strip being divided into 6 equal



BAG FOR SHOES, ETC.

parts, stitch them upwards in place, of course 4 inches apart; the pockets thus formed will receive the shoes, the size in all cases being proportioned to the requirements. I make these articles with two rows for closets in spare rooms, and shallow ones for small shoes in nursery and children's bedrooms. I put square ones with 6 or 8 pockets behind doors in servants' rooms, to prevent their

shoes being thrown in all directions about the room. All of these are made of chintz, figured or plain, generally selected to correspond with the colors of the room. As gentlemen like their changes of shoes close at hand, I made for the library a square box covered with Brussels carpet, using one deep enough for boots, stuffed a seat on the lid, and around this put a wide worsted webbing or fringe; inside the lower part, a few inches from the top, I tacked a wide piece of tape, so arranged as to hold slippers. I am sorry to state, these were often torn down by hasty movements, and the slippers added to the boots and overshoes in the box. This is very useful, and can be made pretty also. Boxes of any form covered with chintz and muslin de laine, the lids stuffed and ruffles arranged around them, are convenient for seats in rooms."

The Table—Order and Ornament.

The winter and early spring months do not allow most housekeepers to place upon their tables the most beautiful of all ornaments—flowers. Only those who have green-houses or are remarkably successful at window gardening can achieve this.



Fig. 1.—RADISHES BADLY PREPARED.

A bouquet of the first wild flowers may now be had with a little trouble; but it is not our purpose just now to speak of floral ornaments; we leave those until flowers become a little more abundant, and attend to leaves instead. Green leaves of themselves are welcome, and all the more so if, besides serving to decorate the table, they are eatable. All who have water-creases,—and every one who has a clear stream should have them—can give the break-

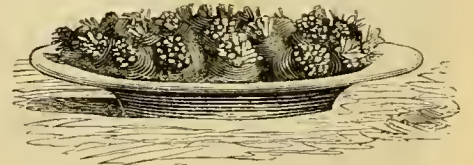


Fig. 2.—RADISHES PROPERLY PREPARED.

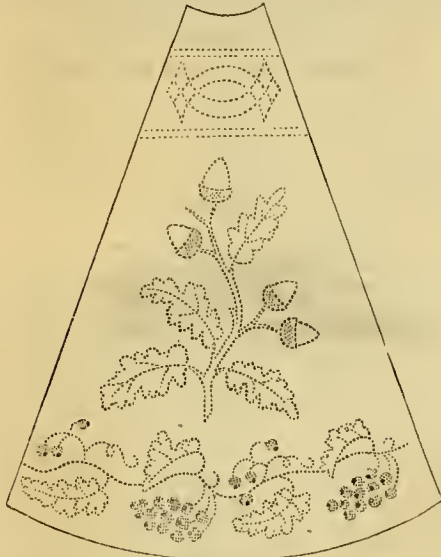
fast table an air of freshness by the presence of a dish of this pungent salad plant. There is order to be observed even with cresses. The plants thrown promiscuously into a dish, while they are just as good to eat, do not do their whole duty in making a table ornament. Cresses should be picked over before they go upon the table. In doing this, gather them in the fingers into little bunches or bouquets, cut the stems even, and set them in a deep dish, stem end down. The result will be a dense mass of bright green, with no light-colored stems in sight. Radishes are among the first things the garden affords. As an article of food they can hardly be called nutritious, but they are highly relished by most persons. To our notion the radish is more valuable to look at than to eat. There is a brilliancy in its scarlet and a freshness about its green that are very satisfying, and radishes on the table are evidence that the garden has commenced to furnish its stores, and a forerunner of many good things to come. Sad work is sometimes made in preparing radishes for the table. There is a right way and a wrong one to do so simple a thing as this. We scarcely ever knew a servant who, if uninstructed, would not cut off all the tops of the radishes. Fig. 1 shows a plate of the early turnip-shaped radish as it often appears on the table, the tops cut off and the tail-like prolongations of the root left, all looking like so many mice. Cut off the long portion and trim the leaves so as to leave a bit of green to each one; set them regularly in a dish, as in fig. 2, and there is a display of green and scarlet, almost as beautiful as a bouquet. The same treatment should be given to long radishes; these generally have a few fibres along their sides which should be removed and the lower end shortened

somewhat. Leave a tuft of green at the top, and place in a tumbler or arrange tastefully on a plate. These are little matters, but let the housekeeper who cares for the appearance of her table try both ways of serving water-cresses and radishes, and we have no doubt which will permanently be adopted.

A Perforated Lamp Shade.

[Mary, Roxabelle, O., writes a very pleasant, gossip letter; we can publish only that portion which describes her method of making a lamp shade. Eds.]

While Brother Henry was home during vacation our store-bought lamp shade gave out, and for his



PERFORATED LAMP SHADE.

temporary convenience he begged some pasteboard and cut out and sewed up a piece, the size and shape of the old shade. This, indeed, was a shade. The board was so thick it permitted no rays of light to pass through it, and the reflection only served to make "darkness visible" throughout the rest of the room. Such gloom was not to be borne, so four oblong openings were cut in the shade; next fancy-colored tissue paper was pasted on the outside, and, the edges of the openings being finished with gilt paper, pictures were inserted on the under side as transparencies. Two of them were scenes from Central Park; one, the head of Washington; and the last, but not the least attractive, a gay young lady, fairly dazzling at night with diamonds, caused by the lamp-light shining through the holes pricked for that purpose. White tissue paper was pasted on the under side of the shade, and the lower edge bound around with gilt paper. In the four alternate spaces, flowers were then pricked. But this one is not my *chef d'œuvre*. I have just finished one for the college brothers, which, though simple, is really quite elegant. This last I made out of six equal-sized pieces of Bristol board, of the shape shown in the engraving. These pieces are to be joined near the top and the bottom by ribbon passed through holes stamped for the purpose; afterwards the lamp shade can be set on the brass rim as common ones are. Around the lower edge I traced by means of impression paper, a wreath, vine, tendrils, leaves, and clusters of grapes, and at the top a plain, narrow braiding pattern. In the centre of each piece I traced some design, such as a butterfly, oak branch, leaves and acorns, ivy vine, a full-blown rose with stem and leaves, a grape vine, and lastly a bouquet of various kinds of flowers and leaves. Then, with the Bristol board resting on a cushion, began the slow and tedious work, prick, prick, prick, with various sized needles, using occasionally a knitting needle and then a stiletto, until all was completed. Upon holding the paper up to the light, the various designs were developed in unsuspected beauty. The pieces are to be lined on the inside with white tissue paper, and then joined together.

Household Talks.

BY AUNT HATTIE.

Edward and I drank tea with a few other invited friends, at Mrs. B.'s last evening. It was the first time we had had the pleasure of partaking of a meal at her house, as she has been in the neighborhood only about three months; however, I have met her several times at the little introductory tea parties that are always given here whenever a stranger comes to settle among us. As this was her first tea drinking, and perhaps because she came from the West, I expected quite an elaborate supper, but was, I think agreeably, disappointed. It was what we call a decidedly plain table. The spread was extremely brilliant and beautiful, crimson being the prevailing shade of color, and the napkins of the finest damask, and of alabaster whiteness; the gilt-edged china was tasteful and pretty; the knives, forks, and spoons, were of silver; the flowers, of which there were two or three small bouquets, were fragrant and delicious. For the refreshing of the inner man was provided, a cup of baked custard for each, deliciously white raised biseuit, one kind of plain fruit cake, (I make a cake very much like it, if not the same, and will give the recipe,) puff pastry tarts with jelly, canned peaches, shaved beef, small cucumber pickles, graham bread in slices, butter, sugar, cream, and green tea. That was all, but there was plenty of it, and everything was made in the most perfect manner, and Edward declared afterwards that it was the best company supper he had ever eaten, and that Mrs. B. was the most sensible woman of his acquaintance.

PLAIN FRUIT CAKE.—Put into the cake bowl a small teaspoonful of butter, and two larger teaspoonfuls of white coffee sugar. If the butter is hard, allow the bowl to stand in the oven or near the fire until it is nearly melted; then beat to a foam. Separate the yolks and whites of four or five eggs, and beat each thoroughly, the whites to a stiff froth, as usual; add the beaten yolks to the cake, and two heaping teaspoonfuls of cream of tartar dissolved in a small teaspoonful of milk, which may be a little sour. If flavored with lemon, it may be put in now. Beat the batter as long as your patience will allow, adding flour as you do so, in small quantities, until stiff enough. It is well to always stir or beat the batter one way. Now put in half a pound of stoned raisins, half a pound of currants, and a quarter of a pound of chopped candied peel. Have a suitable tin for baking, and grease with a little butter; lay a clean sheet of paper on the bottom of the pan, and butter it a little also; just before placing in the oven add a teaspoonful of carbonate of soda, dissolved in a tablespoonful of warm (not boiling) water; stir in quickly but thoroughly. Now the egg froth or foam should be stirred in lightly, but intimately, as its chief use is to coagulate, and to help the flour to sustain the cake after it is risen in the oven. Pour into the tin and bake in a moderate oven; do not open the oven door oftener than necessary after the cake is in. Wait at least ten or fifteen minutes before doing so. It will take from half an hour to an hour to bake, but it will be necessary to try if it is done by running into it a thin skewer or straw. If the instrument comes out clear, the cake is baked sufficiently. I have always observed that cake with raisins and currants takes a longer time to bake than that which is without fruit, though I have not yet solved the problem. Be sure to stone the raisins carefully.

PUFF PASTRY TARTS.—Take a quarter of a pound of very hard and firm lard, and a little over a quarter of a pound of butter, also very cold and hard. Sift three quarters of a pound of the very best white flour; cut the lard into very small bits, but do not chop, or mash, or heat it at all, and mix gently into the flour. Then add gradually about a gill of ice-cold water; you must be the judge of the quantity of water, however, as it is difficult to give an exact rule, but the paste should be soft and yielding, though not at all sticky. Mix as little as possible, hardly touching it. A marble slab is the best to roll it on, but if one is not at hand, use the common rolling-board. Roll thin, and drop the butter

in small bits all over it, pressing lightly in order to fix it. Fold three times and roll again, and fold again the same; roll again, always from you, and fold; now again and fold. It is now ready to be rolled and made into cakes of the desired shape; I use a little gingersnap cutter about an inch and a half in diameter. Make very thin, and keep cold until put into the oven, which should be very hot. Do not look at them under five minutes. They should not brown, and when well risen are done. When desired for the table, put a small piece of firm jelly in the center of each one, and arrange tastefully in a pyramid shape, on a round plate. They give a very pretty effect to an evening table, besides being delicious to eat.

SALADS.—Cabbage chopped fine and mixed with an equal quantity of celery, also chopped fine, makes an excellent salad where lettuce cannot be obtained. We are having fresh green lettuce now every day. It is rather expensive for so large a family, but Edward and I both agree that it is cheaper to pay the gardener than the doctor, and salads and vegetables in the spring of the year are as necessary to health as are comfortable homes and clothing in the winter.

PARSNIPS we get from our own garden. We never have them dug in the fall, as I find that they are not wanted at my table until after the frost is out of the ground, and some kind of a vegetable change is desired. They seem also to keep better in the ground than in the cellar, the frost not hurting them at all, but rather the contrary. I scrape and halve them, boiling very tender. Lay lengthwise, side by side, in a small dish, and put a trifle of butter, and pepper and salt over them.

DANDELION LEAVES.—Gather large, green, and healthy looking leaves, wash, boil tender, and season the same as spinach, or send to table without chopping, allowing each one to season to taste. It is a pleasant vegetable, and is valued by many.

LADIES' FINGERS.—Use any kind of light sponge cake batter. Take a sheet of buttered paper and with a spoonful of the batter draw a shape on the paper the length and size of your finger. Make an even number, bake until crisp and slightly brown, remove from the paper, and join two together by means of a little good jelly. They may be cemented with frosting, or with white of egg alone, if desirable.

TO BOIL PEELED POTATOES.—Wash, and as fast as peeled, throw into cold water and let them stand until twenty-five minutes before wanted for the table. Have ready a tea-kettle of boiling water, put the potatoes into a pot, (a large saucepan is best), put the pot on to a brisk fire, and cover the potatoes with water from the tea-kettle; some add salt, but I reserve it until after the water is poured off. Boil twenty minutes, try with a fork, and if they split they are done; keep on the lid and pour the water from them as dry as possible; return the kettle to the fire for a minute or two, but not long enough to endanger burning. I throw in now a little salt, and take hold of the handle and toss the kettle in such a way that the potatoes will be thrown up and down. When they look white and floury, they have been shaken sufficiently, and may then be dishd for the table. This way of boiling peeled potatoes is the best, but some housekeepers may object to it because it not only involves the trouble of shaking the pot, but of cleaning it afterwards, as some of the floury portion adheres to the bottom and sides; and if this is not removed while moist, it dries, and of course is hard to clean. If the kettle is filled with water immediately after the potatoes are removed, the difficulty will be obviated.

Furs and Moths.—"J. F. W." Put the furs in a box so tight that moths cannot get in to lay their eggs. Few boxes are safe for this, but they all may be made so by pasting strips of paper over every joint, including the crack between the lid and cover. Paper bags made of strong paper, without even a pin-hole, will answer; after the furs are put in, paste the mouth of the bag securely. Aromatics of various kinds are more or less repulsive to the insect, but the only sure way is to see that there are no moths in the furs, and then, beating them well, put them where none can get in.

BOYS & GIRLS' COLUMNS.

A School Girl's Composition. "Spring."

"This is spring. The grass is green—what there is of it—but it's a kind of invisible green just now; and snow isn't. The days are longer than they were when they was shorter, and they'll be a good deal longer yet if they keep on stretching at both ends. The nights aint so long as they used to be. Ma said it was cold yesterday, and I thought so, too. It was scold, scold, scold, all day; it was washing-day. Carrie and me is going to have a May-day party next June. Won't that be jolly! We'll have such fun, and shall invite all the rest of the boys. Spring is one of the four seasons—the foremost one. I like spring; it is such a nice time to go skating. The buds have commenced to sprout on the potatoes down cellar. The end. SARAH ANN."



Picture Story.—Showing the remarkable adventures and escapes of an amphibious individual; every reader can give his own version with variations to suit listeners.

Ready Wit.—It is told of Billy Hibbard, the Methodist, that once when roll was called in the Conference, his name was read "William." He rose at once and objected, saying that his name was not William, it was Billy. "But Brother Hibbard," pleaded Bishop Asbury, "Billy is a little boy's name!" "Yes, Bishop," was the quick reply of the eccentric preacher, "and I was a little boy when my father gave it to me!"

One Secret of "Good Luck."

Clafin, Stewart, Vanderbilt, and many others of less note whom we could name, are regarded by thoughtless persons as "lucky" men. If "luck" means success obtained by constant, untiring attention to business, they have had "luck," for harder working men it would not be easy to find. They worked as faithfully for small gains at the beginning of their career, as they now do, when their transactions involve millions. The first beginnings of one of our heaviest merchants was in a dry goods house where he sought employment, and out of mere pity the proprietor set him to straightening out bent nails that had been drawn from boxes. His pay was scarcely enough to keep body and soul together, but this did not prevent his working industriously and steadily. His faithfulness was soon observed—employers are not as blind as many a fault-finding clerk thinks—and he was advanced to other work at better wages. The same course of devotion to business was followed by promotion, until, step by step, he gained his present independence.

Another with whom we are personally acquainted, now the head of a large commercial firm, at first when a mere lad, besides faithfully attending to his duties in the store, devoted all his spare hours to reading every publication he could find, which gave any information on the branch of business he was engaged in. Some of his fellow clerks attended balls, parties, and other places of amusement, while he was thus engaged, and laughed at him for a stupid plodder. In less than a year he knew more of the business than many who had been employed there for years, and was rapidly advanced accordingly. He is now reaping the fruits of his "seeds of luck" planted with such laborious pains. Stop gumbling, boys, and begin to try this method of compelling fortune to favor you.

"I Want My Own Umbrella."

The following incident is related by a correspondent of the Methodist: "Standing on the middle porch of the Capitol, witnessing the re-forming of the line of procession, after the ceremonies were concluded, I saw several carriages drive up to the steps, and the invited guests, who were to head the column, got in and were driven to their positions in the line. When the President's carriage was brought up, he stepped forward, and was in the act of getting in, when he asked his servant for his umbrella. The man replied that he had placed it in one of the rooms in the Capitol, but on his return to the room, he could not find it. In a moment several gentlemen rushed to the President and offered him their umbrellas in the most kind and pressing terms. 'I thank you, gentlemen, but I want my own umbrella.' Then turning to his servant, he said very quietly: 'I gave you my umbrella in charge; go back and look for it again.' The man left. The head of the column in the meantime was halted. The carriages of the corps diplomatique were waiting their turn to come up. The long line of carriages behind these were at a stand-still. The military companies formed in front were wondering at the delay; everybody seemed to be impatient but the little man who was waiting for his umbrella. He was calm, and looked thoughtful; and well he might, after just coming down from the platform where, before congregated thousands of the people, he had pressed the Bible to his lips in confirmation of the oath of office, to execute the laws, and defend the Constitution. After about ten minutes of most perplexing waiting to all who did not know the cause of the delay, the servant made his appearance, very red in the face, and very much out of breath. Tipping his beaver, he handed the President a well-worn umbrella, which he took, saying at the same time, 'Yes, this is mine;' and quietly poked it under the carriage-seat, and got in, when the procession moved on. This was Grant all over; nothing seems to disconcert him, or turn him to the right or left. He goes straight along, demanding what is right—refusing to compromise short of the right."

A Bear Story.

"Our Boys and Girls" gives the following account of the antics of a pet bear. He was captured when a little cub, and was brought up by hand as one of the family. He claimed the warmest place on the hearth-stone, and nestled in cold weather with the dogs before the fire. None of the pet animals about the farm were tamer than he; and none better loved to climb up into his master's lap and receive his caress, or understood the whims of his mistress when begging for a choice morsel. He was of a prying disposition, and forever peeping into every hole, so the family were obliged to lock up every thing, even the closets where they kept their clothing. If a hen cackled when an egg was laid, Mr. Bear understood it; and if he was not prevented, he would very soon find it and suck it before the cackling fowl had ceased her song. One Sunday the family went to church, and left the bear alone at home. Bruin improved the opportunity, and rummaged all over the house in search of fun or some-

thing to eat. Unfortunately, the good housewife had left the cellar door unlocked and ajar; and it was not long before the bear discovered it and crept down the stairs. Once down in the cellar, he espied the molasses barrel; and if there was any thing in the house he was excessively fond of, it was molasses or honey. Bruin pawed over the barrel, licked the tightly driven bung, and was about abandoning it in despair when he espied the spile. Grasping it with his strong teeth, he easily withdrew it, and out came the molasses in a stream, to the great delight of the bear, who clapped his mouth to the hole and sucked away with grunts of self-satisfaction.

The molasses still flowed, and still the bear kept his mouth to the orifice, pausing now and then to take a long breath. At length he was full; his stomach could hold no more; yet his appetite was not satisfied. He squatted on his haunches and viewed the still running stream with disgust, to think that the supply was so abundant, and that, alas! he could hold no more. The molasses had now run out in large quantity, and had formed a great pool on the floor; but Bruin dove into it, and rolled himself a thousand times in the thick fluid, until his shaggy coat, from his nose to his tail, was covered with molasses, dirt, and gravel stones! There he caroused in the sweet pool, as cats roll and tumble in a field of the catnip herb. All at once Mr. Bear became sick at the stomach! And it was a new sensation to him—something he had never felt before. As he grew worse, he thought of his master and mistress, and so crept upstairs to ask for their consolation; but they had not returned from church. Then he crawled up another story, and got into the girls' bed, drawing the snowy white sheets over his besmeared form. There he lay groaning and grunting, the sickest bear ever seen by anybody in that part of the country.

When the girls arrived they were horrified at the scene, and were going to lay the broomstick over Bruin, when he started on the run for the haymow with the sheets sticking to his back! It was some time before the bear got well, and still longer before his mistress forgave him.



No. 342. Conundrum.—Whose pitchers are these?



No. 343. Illustrated Rebus.—Good advice for the rash

Answers to Problems and Puzzles.

The following are answers to the puzzles in the April number, page 143. . . . No. 340. Puzzle Inscription.—Read backwards, it is "I told you once." Some have had considerable amusement by telling a friend the answer when he was trying to solve the puzzle; the friend, of course, denied having been told, and kept on trying to read it correctly. . . . No. 341.—Illustrated Rebus.—A party of soldiers on the plains firing at the Indians (Good, new puzzles of all kinds are always welcome from our readers.) . . . The following have sent in correct answers: John Shabo, G. A. Harpel, Charles Miller, Leonard A. James, E. W. P. Heeney, Charlie Rickner, T. Joralemon, B. B. Keeler, C. C. Keeler, M. C. Woodward



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COVETOUSNESS.—FROM A PICTURE BY PEYROL BONHEUR.—Drawn and Engraved for the American Agriculturist.

"Johnny must not go out of the yard" was the caution which his mother gave her little boy. They were spending a month in the country, and Johnny, all unused to such a life, found wonders enough to occupy his attention for a long time, without wandering out of the safe bounds of the ample yard surrounding the dwelling. But as these grew familiar, he longed to see what was beyond. Especially did he want to go across a field which lay opposite, and see how it looked in the woods which bordered it. There must be wonderful things there, he thought. His nurse had told him stories about Indians and monkeys, and curious birds that lived in the woods, and here, he thought, was a chance which he might never have again to see them for himself. So one morning after dreaming all night about it, he slipped away unperceived, and soon reached the edge of the unknown land. "Grapes! Grapes!" he shouted, as he saw the ripe clusters hanging from a wild vine, and quickly grasped a bunch. What strange noise was that he heard? "Ca-dork—dork—dork." Just then remembering that he was doing wrong, his heart fluttered with alarm; nor was he less frightened when on turning around he saw what appeared to him a real monster, eyeing him keenly, and uttering that fearful "Ca-dork—dork—dork." It was the farmer's pet Brahma rooster, an enormous bird, enough to frighten any child, and no wonder the little fellow dropped the grapes and ran for the house, screaming with all his might, "Mamma! Mamma!" In telling of it, when safe at home again, he greatly amused his friends by very solemnly assuring them, that the "big thing with feathers on" hallooed after him, "Cut, cut, cut," "and," said he, "I did cut just as fast as I could, and I'll never go out of the yard alone again." And he faithfully kept his word.

Revenge.—Different persons have various ways of taking revenge; the following was a humorous man's

way. He called at a house to see a friend and inquired, "Is this Mr. Jones's house?" "No, it aint," replied the servant, very snappishly, and slammed the door in his face. Thus repulsed, the man walked away, but suddenly an idea struck him and he returned for his revenge. He rang the bell, and when the same servant appeared, he snapped out as shortly as possible, "Who said it was?" and retreated, well satisfied with his peculiar revenge.

A Genuine Ghost.—(A FACT.)

"No, I never saw one in my life, and never saw anybody who had seen one, either. And what's more, I don't believe in 'em. Just show me one—a genuine ghost,—and then I'll have faith."

"Well," said old Aunt Debby, "I have seen a ghost,—as real a ghost as anybody ever laid eyes on. 'Twas more'n thirty year ago, just after I buried my first husband. I was lookin' round for a place to live in, and heard of a house in Jackson-street, where the rent was very low. One of the neighbors told me it was offered so cheap because no family could stay on account of a ghost of the man who had lived there last that haunted it."

"Did I feel afraid? No, not a bit; for I didn't believe in such things; and besides, I had known the old man well in his lifetime, and been good friends with him, too. I didn't know any cause why he should turn to be my enemy after he was dead. So I took the house, glad to get it at so low a price, and moved in my furniture. Towards evening, I went over and made ready to pass the night there. Was I alone? Aye,—that I was, all alone, for I was a poor widow, and my children across the sea."

"'Twas a warm night, and so I opened the doors and windows, after I had lighted my lamp. Then I sat down by my table, to knit awhile, and read my chapter in the Bible, before going to bed. I was a knittin' and a readin' together, with the Bible open at the Ninety-first Psalm,

when all of a sudden, I heard a strange sound upstairs. It was a low cry, just like a wailin', sobbin' child would make; and seemed to be goin' round and round the gullet. 'It's nothin' but the wind,' says I to myself, but when I looked out o' doors, and saw how still and quiet every thing was, with the stars a shinin' down so calm, I knew it couldn't be the wind. Then I thought it might be a rat or a mouse, but I knew very well that no such animal could make that sad, melancholy moan, which seemed to pierce to my very soul. I listened a little while, tryin' to think what could make such a strange noise, and at last says to myself, 'Deb, that is a ghost, sure enough, and no mistake.'

"Frightened? No; at any rate, not much, for I had no cause to fear aught on earth, or in the grave. I read my chapter through,—all about the angels havin' charge over us, and the 'terror by night'—and the rest of the dangers. But all the time, the sound—that awful wail,—kept on with its solemn voice. I heard it coming down stairs, and with it a gentle footfall,—down, down, a step at a time. It reached the floor, and then stopped. I looked—for I could not help lookin',—and there, right at the doorway, I saw standing in the dark, two gleamin', flashin' balls of fire! Now, I began to be scared, but I gathered up all my courage and spoke out loud, 'Come forth!' And upleaped—a big black cat!

"That was all there was of the ghost. I knew the cat as soon as I saw it plainly; and it knew me too, and came towards me, purrin' and moanin' by turns. You see, the old cat was weepin' for its dead master; and as it stood in the door, the candle-light on its eyes made them look like balls of fire. That was the only time I ever saw a ghost; and I don't believe anybody ever saw a better one. I kept the old cat, and well I might, for she had saved me forty dollars rent, besides drivin' away the rats and mice from the house."

"THE BEST JUVENILE MAGAZINE EVER PUBLISHED IN ANY LAND OR LANGUAGE."

OUR YOUNG FOLKS.

The popularity of this Magazine for Boys and Girls, although very great from its commencement, has been largely increased this year by Mr. ALDRICH's remarkable "Story of a Bad Boy," and by the very instructive and fascinating articles on subjects of practical interest and importance by Mr. PARTON, Mr. TROWBRIDGE, Mrs. AGASSIZ, Mr. HALE, MAJOR TRAVERSE, and other popular writers. The tastes and benefit of all classes of readers have been consulted; provision has been made for the best of Stories to please those who prefer stories to any other reading; while for those who desire to learn, as well as to be amused, excellent articles have been prepared by the most skillful and pleasing writers on Glass-Making, Coal-Mining, Ship-Building; on Voyages, Discoveries, and the Lives of Great Navigators; on Earthquakes, Coral Animals, and the Islands they build; on fresh and attractive topics of American History; on Gardening for Girls; How to Talk, How to Read, How to Write, How to Travel, How to Act in Society, and How to Work. For entertainment and sharpening the wits of the readers of "OUR YOUNG FOLKS," the Evening Lamp furnishes a choice and abundant collection of Enigmas, Riddles, Puzzles, etc.

To show the estimation in which the Magazine is held by those who are acquainted with it, the Publishers annex the following letters:

FIELDS, OSGOOD & Co.:

I got from you four numbers of "Our Young Folks," and I read every word of them. I have showed them to several boys here. Every boy likes them. Ten boys told me they would sign with me for them, but all of them couldn't get the money now. I send you the money for five names. Some boys say they can't get their fathers to sign for any papers. Their fathers are able to sign. I think "Our Young Folks" the best Magazine in the world. Here are the names.
Truly yours,
H. A. L.

CLEVELAND, Ohio, March 24th, 1869.

MESSRS. FIELDS, OSGOOD & Co.:

I am a little boy, and live here at the far West. I used to live in Mass., near Boston. I have been in your store many times, and have several books published by you. I came here near two years ago. My brother has given me the first and second volumes of the "Young Folks." I liked it so well, I want to own them all, and have tried to earn money enough to pay for them. I have found it hard work, as money is not as plenty as work is. But I have succeeded now. I want to know how much you will let me have the back numbers of 1867 and 1868 for—and I will also subscribe for 1869. I mean to keep on taking them as long as they are published, which I hope will be for a long time.
C. W. K.

HERMANN, Mo., Jan. 3, 1869.

Please find enclosed \$2.00, renewal of subscription for "Our Young Folks" for 1869. We enjoy the book so much we feel as though we could not get along nicely without it. Many a lonely and sick hour has been passed pleasantly by its help, and I think it improves all the time.
Your friend,
Miss L. M. M., Bloomington, Ill.

COLD WATER, Mich., Feb. 12, 1869.

I wanted so many new books and tools this year, I thought I would try and get along without "Our Young Folks," but I can't do it. I am lame and cannot go off and play with the other boys, so I must have my old friend again.
D. L.

Enclosed I send you two dollars, to pay for "Our Young Folks" another year. Times are very hard, and we thought we would have to give up "Our Young Folks" for the coming year, but when the Dec. No. came, 'twas like parting with an old and tried friend, and to think that was the last No. caused an extra effort among the young folks, and I shall not say that the "Old Folks" did not assist; the consequence of which was "Peter was robbed to pay Paul."
J. M. C., West Glaze, Missouri.

February 1st, 1869.

I have taken your Magazine for nearly two years, and I like it very much. "Cast away in the Cold" was a very good story, and I think that the "Story of a Bad Boy" will be a good one, too. I am eleven years old and I think I will take it all my lifetime. I buy the Magazine every month from Mr. Winters, who keeps the stationery in Rondout.
Yours truly,
E. S. C.

ALLENVILLE, Mifflin Co., Penn., Feb. 15th, 1869.

I have long felt the need of some interesting Magazine to enliven the reading class. "Our Young Folks" is what we need. I am going to make the experiment, and use every effort to have it in the hands of every pupil who can understand it. Had we something fresh and instructive to interest our pupils, we should not have near the difficulties we have in keeping a quiet, orderly school.
B. I. S.

ELIZABETH, N. J., Feb. 16th, 1869.

I have long admired your Magazine, "Our Young Folks,"—ever since a copy came by chance under my observation. I think it is the best magazine for young folks published in this country, or even in the world, for I don't see how it could be better. It is just the thing for a family, there is something in it for all ages. I like "Farming for Boys," and "Gardening for Girls." I like Mr. Aldrich's story. It commences some like "Tom Brown."
C. F. C.

BINGHAMTON, N. Y., Feb. 23d, 1869.

I have read "Our Young Folks" ever since it was first published, and like it famously. I think it much superior to any other Magazine for Young Folks, and hope it may long continue to delight their homes and improve their minds.
Truly,
H. L. K.

I read one number over and over, till I get another number. William Henry's letters are very good indeed. I intend saving all the numbers of "Our Young Folks," and have them bound—they will make a very pretty book. I am the only one that takes "Our Young Folks" in this town, but they all like it so well that I think I can raise a club for it.
L. D.

HEBRON, Porter Co., Indiana, March 30th, 1869.

GENTLEMEN:—At the commencement of the publication of "Our Young Folks," wishing my young folks to have the benefit of it, I procured and sent you a small list of subscribers in this place, and so far as I can learn, they were all, both young folks and old, well pleased. I believe it will be a pleasure to you to know that even now, although the old numbers have been read through time and again, and are sadly worn by faithful use, still, every once in a while, they are again brought out to undergo another satisfactory perusal; and the only regret ever expressed in my hearing is that there are no more of them, and I know surely, that anything that will give so much pure, harmless pleasure at so little cost is too valuable to part with voluntarily. So now I propose that if you will send me the four specimen Nos., and the terms, I will see how many subscribers I can procure in this vicinity.
S. B. K.

LA GRANGE, March 5th, 1869.

As I have just received March number, I thought I would write and tell you that it was a perfect gem. The story of a "Bad Boy" is splendid, and so is Glass-Making. I did not think there could be any better than January or February numbers—but it is. I know I shall be interested in Coal-Mining and Ship-Building. This is the first year I have taken "Our Young Folks," and I wonder I could have done without it so long, now that I take it.
L. G.

VASSAR, Michigan, March 9th, 1869.

I thank you very much for the present you sent me in the March No. of "Our Young Folks." I am a poor little boy, have had to split wood for this dollar, thought you would send it to me for six months for it. You do not say anything about doing any such thing, and I am almost afraid to ask you, but I do want your Magazine the worst way. I like the History part of it. Please send me "Our Young Folks" as long as you can for the dollar I have enclosed, and I will thank you ten thousand times.
J. F. D.

A lady in Amsterdam, N. Y., writes this about "Our Young Folks": "I have been a reader and admirer of 'Our Young Folks' ever since it was published. Deeply interested in children myself, fully in sympathy with their needs and tastes, I have also been for their dear sakes, a hungry reader of juvenile works, and have never found anything that suited me as well as your publications,—nothing that seemed so well adapted to their wants as an educational force, morally and intellectually. One thing which your competitors have overlooked, you have admirably and earnestly labored for—the development of the love for the beautiful lying latent in every child's heart. The Magazine has a loving and beautiful mission, a ministry to all child life, and I would love to put it in the hands of every boy and girl in the land."

PHILADELPHIA, March 24th, 1869.

MESSRS. FIELDS, Osgood & Co.—Dear Sirs: Do, for goodness' sake, send on "Our Young Folks" for April. The March number for my boys has not arrived, and there has been no peace in the house for the last ten days. My boys are so much interested in the story of a "Bad Boy," that it is nothing but Tom Bailey from morning till night. If I were any judge of such matters, this story is what I call a hit. Do hurry along the April number.
Yours,
L. M. C.

SPRINGFIELD, Feb. 23., 1869.

TO THE EDITORS OF "OUR YOUNG FOLKS."

"Your magazine is such a source of delight in our family, and at the same time so valuable and instructive to our children, that I feel impelled to write you and thank you for what you are doing for them and for others like them. We have taken the magazine ever since it started, but we think it more interesting than ever this year.

"The 'Story of a Bad Boy' pleases my boys so much that they fairly commit each installment to memory. Mr. Trowbridge's articles on Glass-Making we have found particularly interesting, and so are the articles by Mr. Parton, and Mr. Hale, and Mrs. Agassiz. I assure you that the monthly arrival of your Magazine is a great event in our household. Expectation gets on tiptoe about the middle of each month, after which time the Post-office boy is closely watched by two pair of eager young eyes on the lookout for what they call the best magazine that ever was."

"In sober earnest, dear Editors, I feel that you are doing my children an inestimable good, that you are furnishing to them a style of reading in every respect admirable and particularly adapted to them; and as I see the interest with which they read what you prepare for them, and observe its restraining and developing influence upon their young minds, I feel grateful that in their education I have such a valuable assistant as your magazine.

Respectfully yours,
Mrs. A. M.'

"OUR YOUNG FOLKS" is only Two Dollars a year, and the numbers for January, February, March, and April, 1869, will be sent free to any one who wishes to examine the Magazine, on application to the Publishers,

FIELDS, OSGOOD & CO., 124 Tremont Street, Boston.

Choice Seed Potatoes.

Early Rose.—One pound, \$1.00; Three pounds, \$2.00. by mail, post-paid. 1 peck, \$5.00; 1/2 bushel, \$8.00; 1 bushel, \$15.00; 1 bbl., \$40.00; 5 bbls., \$175.00. Climax.—One pound, \$3.00. Bresee's Prolific.—One pound, \$2.00. One pound each of Climax, Bresee's Prolific, and Early Rose, mailed post-paid to any address upon receipt of \$5.00. London White.—Early and good. 4 pounds, by mail, \$1.00; 1 peck, \$2.50; 1 bushel, \$9.00; 1 bbl., \$20.00. Vanderveer's Seedling.—4 pounds by mail, \$1.00; 1 peck, \$1.50; 1 bushel, \$5.00; 1 bbl., \$12.00. Early Goodrich and Harison.—\$1.00 per barrel. Our new Illustrated Potato Catalogue, with instructions for culture, mailed free to all applicants. See advertisement in Agriculturist for April.

B. K. BLISS & SON, 41 Park Row, (Box 5,713 P. O.) New York.

New Sweet Potato.

Southern Queen.

This New Sweet Potato, lately introduced from South America, is of wonderful productiveness, and in the estimation of all who have tested it, the finest flavored and best for table use, of any ever before offered to the public. We offer for sale a limited number of sprouts at \$2.00 per 100, \$3.00 per 500, \$5.00 per 1,000.

No orders received for less than 100.

NANSEMOND SWEET

Potato sprouts at 75 cents per 100, \$3.00 per 500, \$5.00 per 1,000.

Sent by mail for 10 cents per 100 additional. Cash must accompany the order. B. K. BLISS & SON, P. O. Box 5,712, 41 Park Row, New York.

Collections of Flower Seeds by Mail.

The following collections have been sent out from our establishment for the past 15 years, and are now favorably known in every section of the country. They contain the most showy varieties in our large assortment, with full directions for culture. Each packet contains a mixture of the different colors and varieties of its species, so that a greater display can be made at a much less price than when ordered in separate packets. Those unacquainted with Flowers, as well as the experienced cultivator, may order without fear of disappointment.

- No. 1—contains twenty choice varieties of Annuals... \$1.00
No. 2—contains twenty choice varieties of Biennials and Perennials... 1.00
No. 3—contains ten extra varieties of Annuals and Perennials, embracing many of the new and choicest in cultivation... 1.00
No. 4—contains five very choice varieties, selected from Prize Flowers, of English Pansies, German Carnation and Picotee Pinks, Verbenas, Truffaut's French Asters, Double Hollyhocks... 1.00
Any one remitting \$3.00 will receive the four assortments, postage free.

B. K. BLISS & SON, Box 5,712, 41 Park Row & 151 Nassau-st., New York.

Collections of Kitchen Garden Seeds.

A COMPLETE ASSORTMENT OF VEGETABLE SEEDS FOR ONE YEAR'S SUPPLY, FOR A LARGE OR SMALL GARDEN.

The following Collections are made up in the most liberal manner, care being taken to give a sufficient quantity of all the finest varieties and most useful sorts of Vegetables required in the Kitchen Garden.

- Assortment No. 5 contains 55 varieties, \$3.50
No. 6 contains 33 varieties, 2.00
No. 7 contains 15 varieties, 1.00

The above are prepared expressly for sending by mail, and will be sent post-paid, upon receipt of prices annexed. Larger Collections, which can be safely sent by express (freight paid by purchaser), to any part of the country, as follows:

- No. 1, \$20.00; No. 2, \$15.00; No. 3, \$10.00; No. 4, \$5.00.
For a list of the contents of each Collection, see Catalogue, pages 192 and 193. Address

B. K. BLISS & SON, Box 5,712, 41 Park Row & 151 Nassau-st., New York.

New and Choice Melons.

PERSIAN WATERMELON.—Introduced by Bayard Taylor, Esq., the well-known traveler, from the borders of the Caspian Sea, and first offered for sale in 1867. After a trial of two years we can confidently recommend it as a most valuable acquisition, particularly for the Middle and Southern States. It is globular and elliptical in form, of pale green color, with dark stripes; flesh crimson and of remarkably fine texture; delicious flavor, with only half an inch of rind. A peculiarity of this Melon is that it can be taken off the vine to ripen, and will keep till winter. It grows to a large size. 25 cents per packet of 10 seeds, 5 packets for \$1.00.

MINORCA MUSKMELO.—A new and valuable variety of the Muskmelon, grows to a very large size, flesh of fine texture, excellent flavor and very productive. 25 cts. per packet of 10 seeds; 5 packets for \$1.00.

HUNTER'S IMPROVED PERSIAN MUSKMELO.—Grows to a large size, very productive, and of superior quality, per packet of 10 seeds, 25 cents. For sale by B. K. BLISS & SON, 41 Park Row, & 151 Nassau-st., P. O. Box 5,712, New York.

Wethersfield Onion Seed.

Red Wethersfield, Yellow Danvers, and White Portugal, by mail, post-paid, at 50 cts. per ounce; \$1.50 for 4 ounces; \$5 per pound. B. K. BLISS & Son, P. O. Box 5,712, New York.

Seeds to be Sown in May and June.

Table with 2 columns: Seed Name and Price. Beet, Mangel Wurzel, Long Red, and Yellow Globe; White Sugar; Ruta-baga, Purple Top; Turnip, Long White French.

FERRE, BATCHELDER & CO., 231 Main-street, Springfield, Mass.

Rhode Island White Cap Seed Corn.

Acknowledged to be one of the best varieties. Fourteen bushels by measure of ears yield ten bushels by weight of shelled corn. This corn, raised by me in Rhode Island, is better adapted for seed corn south of this State, than corn raised on the spot, as it will ripen earlier.

Also for sale a full-blooded Ayrshire Bull Calf one year old this month, with pedigree, and from the best of stock. Address AMASA M. EATON, Providence, R. I.

New and Rare Vegetables.

Having been the original introducer of the Hubbard Squash, Marblehead Mammoth Cabbage, and many other new things, I still continue to make the raising of the seed of new and rare vegetables a specialty, in addition to the standard kinds. Catalogues gratis to all. JAMES J. H. GREGORY, Marblehead, Mass.

DUTCH BULBS, imported by LONGHURST & LAUREL, 52 Cedar St., New York, on special orders from Messrs. L. VAN WAGEN & Co., the celebrated Florists, of Haarlem, Holland, whose superior products have given such universal satisfaction for the past years. Parties desirous of ordering selected bulbs of superior quality will please forward their orders to us before the 1st of June. Price Currents and further information furnished upon application.

SEND FOR THEM.

CROSMAN'S New Improved Frankfort Head Lettuce, and the Early Prolific Nantuck Muskmelon, 15 cents each or both for 25 cents. Two of the most valuable New Vegetables ever introduced, which I will send post-paid to any address upon receipt of price. C. W. CROSMAN, Seedsmen, P. O. Box 80, Rochester, N. Y.

OLM BROTHERS' New and Rare Plants.

We would call the attention of Amateurs to our large and fine stock of New Plants. Golden tricolor Pelargoniums, Mrs. Pollock, and others. All the new double-flowering Zonale Pelargoniums, Symphitum peregrinum, Salvia tricolor, Macleaya yedoensis, New Begonias, Cannas, Coleus, Gloxinias, Gesnerias, Achimenes, Ferns, Fancy Show, and Bedding Dahlias, Roses, Verbenas, Tritomas, and a general Collection of Bedding-out Plants, Shrubs, etc. Send stamp for our Illustrated Catalogue. Address OL M BROTHERS, successors to B. K. Bliss, Springfield, Mass.



VANDERVEER'S SEEDLING.

In introducing to the public my new seedling potato I would say, it was grown from seed raised by me in 1862 from imported California potatoes. Having cultivated it from that time, it has each year proved more and more its superior quality and merits, possessing all the points desirable in that highly esteemed esculent. I claim for it that as to productiveness, size and uniformity, carliness, whiteness, fine flavor, and dryness in cooking, no rot while growing or keeping, freedom from blight, it excels all others. As a winter and spring variety it has no equal, retaining its solidity, freshness, and flavor, having had prime old on my table one day and ripe new ones the next. Prices for 1869 as follows: per barrel, \$12, bushel \$5, half bushel \$3.75, peck \$1.50, 4 lbs., postage paid, \$1. Sample can be seen and circular obtained of the undersigned or at this office. Address orders to W. H. VANDERVEER, Port Washington, Queens Co., N. Y.

SEED POTATOES.

Our Catalogue and Price List of 100 VARIETIES OF POTATOES is now ready and will be sent free to all applicants. Address REISIG & HEXAMER, New Castle, Westchester Co., N. Y.

EARLY ROSE AND WHITE CHILI.

Early Rose, the best early Potato, \$5 per peck; 4 lbs. by mail, post-paid, \$2. White Chili, the best late, \$2 per peck; 4 lbs., by mail, \$1.50. Early Goodrich, \$3.50 per bbl. Harison, \$4 per bbl. Orano, very good, \$1.50 per bbl. Also, Forfarshire Red, most productive kind; Cueco; Lapstone Kidney; Andes; New White Parading; and every desirable sort at lowest rates. Send a stamp for our Illustrated Descriptive Priced Catalogue of the newest and best Garden and Field Seeds and Seed Potatoes. L. D. SCOTT & CO., Huron, Ohio.

Early Rose and Goodrich Seedling Potatoes for Sale,

By pound, bushel, or barrel. Circular sent free. RICHARD YOUNG, Morton's P. O., Springfield, Delaware Co., Penn.

CABBAGE AND CELERY PLANTS—See advertisement in June number, or write for price list, etc. G. H. HOLDEX, South Norwalk, Conn.

Early Rose and Harison Potatoes.

Early Rose, 5 lbs., \$2, free by mail. 1/2 bushel, \$7. 1 bushel, \$12. 1 barrel, \$35. Harison, 1 barrel, \$1, 10 barrels, \$25.00. One barrel Harison and 4 lbs. Early Rose, \$5. Climax \$3 per bbl. Address W. S. CARPENTER, 156 Reade-st., New York.

HARISON POTATOES!—Warranted genuine. 200 bbls. at \$4 per bbl. Early Goodrich at \$1 per bbl. E. Rose, \$1 per bbl. Warren L. Baker, Portlandville, Otsego Co., N. Y.

NANSEMOND SWEET POTATO SPROUTS, 75 cents per 100, by mail, prepaid, \$3.00 per 500, by Express. Price per 1,000, by Express.

Carefully packed, with full directions for culture. Address J. M. HALSTED, Box 23, Eye, N. Y.

SWEET POTATO PLANTS for sale by I. J. SIMONSON, at 58 Cortlandt-st., New York. Price per 100, 75 cents. Price per 500, \$2.00. Price per 1,000, \$5.00.

SWEET POTATO PLANTS, by the 100, 1,000, or 10,000. Delivered in New York, or sent by mail. Send for Priced list of Vegetable Plants. H. E. ACKER, Woodbridge, N. J.

Strawberry Plants by Mail.

We will send by mail, post-paid, to any address in the United States, the following Strawberry Plants, carefully packed, at the following prices: One dozen each Agriculturist, Hovey's Seedling, and Russell's Prolific, \$1.00. One dozen each Agriculturist, Hovey's Seedling, Russell's Prolific, Wilson's Albany, and Juncuda, \$2.00. One dozen each Nicanor, Agriculturist, Wilson's, and Russell's, \$2.00. For a complete list of PLANTS, FRUIT AND ORNAMENTAL TREES, &c., see our ILLUSTRATED CATALOGUE OF PLANTS, price 5 cents. Address FERRE, BATCHELDER & CO., 231 Main-st., Springfield, Mass.

Strawberry Plants.

Our Catalogue of over 100 varieties of Strawberries and other valuable Small Fruit Plants will be mailed to all applicants. Address REISIG & HEXAMER, New Castle, Westchester Co., N. Y.

Strawberries Selected from 100 Varieties.

Dr. Nicaise, Napoleon III, Romeyn Seedling, Nicanor, White Alpine, and Negro plants 75c. doz., \$3, 100. Charles Downing, 50c. doz., \$1.50, 100, \$12, 1,000. Juncuda, Green Prolific, Agriculturist, and Barnes' Mammoth, 35c. doz., \$1.25, 100. President, \$1.50 doz., \$5, 100. Peak's Emperor, \$1.50, doz. The 13 varieties, 1 doz. each, for by mail, for \$5. Boule de Ver, \$1 each. Lev. and Roy, Hat box, 75c. each. Address W. S. CARPENTER, 156 Reade-st., New York.

A General Variety of Plants, &c.

It is still in time to plant Strawberries, Raspberries, Blackberries, Potatoes, &c., and let those remember who wish to plant that if they send and get my Price List of reduced prices they will find them as low, if not lower, than are offered in this paper. If you wish to purchase, don't fail to send for one, or send a list of what you want and I will return the price of same. THOS. C. ANDREWS, Moorestown, N. J.

JOHN S. COLLINS, Moorestown, New Jersey, continues to fill orders for plants promptly.

The Continental Fruit Package

Combines COVERED box, SPRING crate, and thorough ventilation. Illustrated circular free. CONTINENTAL BOX CO., No. Bridgewater, Mass.

HEDGE OSAGE PLANTS, No. 1, at \$5 per 1,000; \$30 per 5,000, by Express, prepaid 1,000 miles. Safe to plant until June 1st. JOHN WAMPLER, Troywood, Ohio.

No. 1 OSAGE PLANTS, PACKED.—5 M, \$15.00; 10 M, \$25.00; 50 M, \$120.00. Large lots at less rates. PEARSE & THOMPSON, Bloomington, Ill.

ARBOR VITAE, and other small Evergreens: per wholesale, very low. Prices on application. L. B. CHAPMAN, 50 Cortlandt Street, New York.

2,000,000 EVERGREENS, 6 inches to 3 feet high. 200,000 Arbor Vitae, hedge size, Nursery grown, 8 years transplanted. Nursery Stock at wholesale and retail. A. P. CHAPMAN, 50 Vesey-st., New York.

Farmers & Gardeners,

Do you wish to DOUBLE YOUR CROPS? Do you want EARLY and LARGE VEGETABLES? Do you want IMMENSE CROPS OF ONIONS? Do you want all this AT A LESS EXPENSE THAN USING BARN-YARD MANURE? Then buy the DOUBLE-REFINED POUDERETTE. Send for a Pamphlet to The Lodi Manufacturing Co., Box 3,139, N. Y. P. O.

OFFICE, 66 Cortlandt Street, N. Y.

"GUANO."

No. 1 Peruvian, (delivered from Government Stores), price \$61, Gold, or its equivalent in currency. E. P. COE'S Superphosphate, fine Ground Bone, Land-plaster, Castor-pomace, &c. J. R. DECATUR & CO., 197 Water-st., New York.

WHITE LEGGED DERBY GAMES.—A few pairs of these celebrated fowls for sale. For terms, &c., address: E. O. WEEKS, Kingston, N. Y.

THE PREMIUM SANFORD CORN.



EVERY FARMER should send for my descriptive circular, giving history of the SANFORD CORN and testimonials from nearly every State. East, West, North, and South, indorse it as THE BEST field Corn. PRICES: 1 Quart, post-paid, \$1.00; 1 Peck, by Express, \$3.00; 1 Bushel, by Express, \$6.00. All orders must be accompanied with the cash, or sent C. O. D. Address S. B. FANNING, Jamesport, Long Island, N. Y.

TESTIMONIALS OF FARMERS WHO HAVE GROWN IT:

I consider it a superior variety, yielding more to the acre, weighing more to the bushel, and furnishing better stalks for fodder, than any of the kinds heretofore cultivated in this section.—S. TERRY HUDSON, Success, Suffolk Co., N. Y. My experience with the Corn you sent me is highly satisfactory.—M. J. WHEELER, GREAT BARRINGTON, Mass. Far superior to any other variety that I have ever cultivated.—THOS. A. HALLOCK, Mattituck, Suffolk Co., L. I. Superior in all respects to any other I have ever planted.—D. W. REEVE, Attorney-at-Law, Franklinville, L. I.

IMPORTED BULL JERSEY PRINCE, out of premium stock on the Isle of Jersey. Jersey cows and heifers. Imported and prize native poultry and eggs. Send stamp for circular. Be your own judge of pure bred poultry. Buy the STANDARD OF EXCELLENCE, containing full description of every variety. Price 50 cents. J. M. HALSTED, Rye, N. Y.

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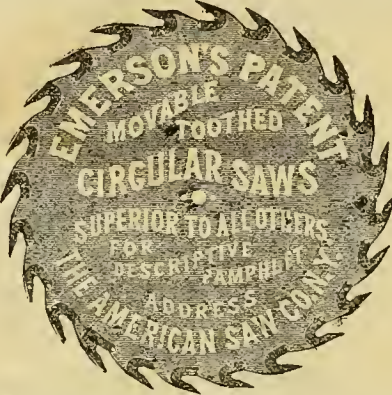
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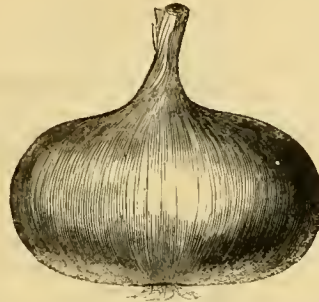
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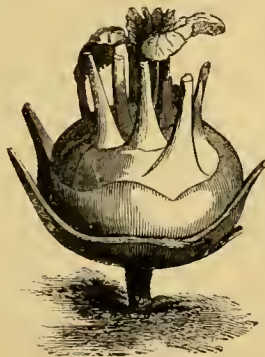
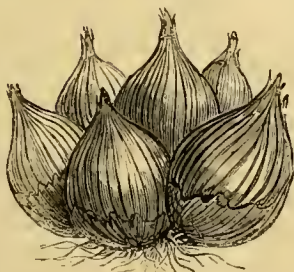
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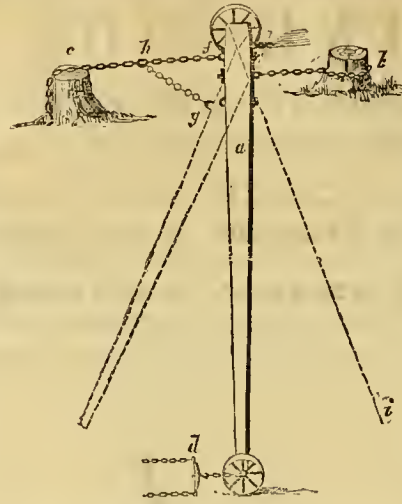
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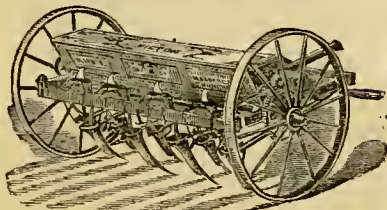
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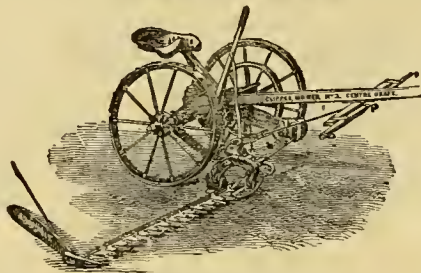
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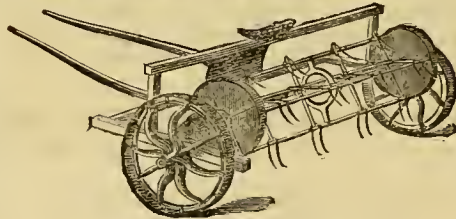
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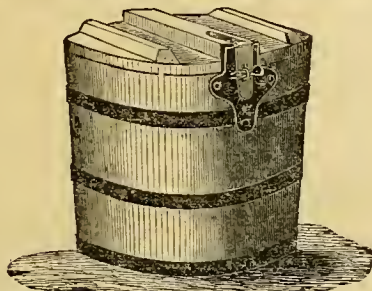
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With two wheels. For boy's size, wheels 24 and 26 inches, plain seats, \$30. Ditto, with horse body, \$35. A boy can learn himself to ride in a few hours. Velocipede Cantering Horses, \$12 to \$35 for boys or girls. Velocipedes and Propellers, with 3 or 5 wheels, \$4 to \$15. For sale by the manufacturer,
S. W. SMITH, 90 William-st., New York.

SORGO HAND-BOOK.

Our 10th Annual Sorgo Hand-Book,

Giving the most reliable information on Manufacturing Sorghum Syrup, the result of 11 years' personal experience, with full description of the celebrated Cook Evaporator and Victor Case Mill—sent free to all applicants.
BLYMYER, NORTON & CO.,
Cincinnati, O.



The most economical Crate and Basket in use. Neat, strong, compact, and well ventilated. Agents wanted in all the fruit-growing districts. Parties in Western N. Y., and States west, must address NEWFAUNE BOX & BASKET CO., Newfaune, N. Y. CIRCULARS SENT FREE.

FLAX BRAKES,

That break 2,000 to 3,000 lbs. Flax Straw in ten hours, and take out 65 per cent of woody matter. A man and boy with one to two horses, can work them. Will break both tangled and straight straw, and save 120 lbs. to the ton more than any other machine, while it does the work better. No danger to life or limb. They weigh about 1,000 lbs., occupy about five feet square, and as now made are strong and durable. Sold all ready to put the belt on pulley and start them. Hundreds are in use, and are admitted to be the best machine to break flax. Flax and tow now bring high prices, with increasing consumption. Send for circular to

JOHN W. QUINCY, 98 William St., New York City, Treasurer and Agent of the Mallory & Sandford Flax Machine Co.

The best instructions for raising flax are contained in a "Manual of Flax Culture," published by Orange Judd & Co., 245 Broadway, New York.

Pat'd Water-Proof Paper Roofing, Siding, Ceiling, Carpeting, Water Pipes, Eave Gutters, &c. Address
G. J. FAY & SONS, Camden, New Jersey.



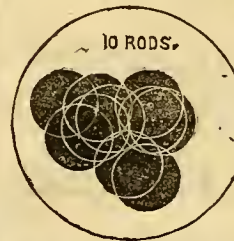
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Descriptive Circulars with price list and Target Representations, will be sent on request by letter. Address as above.

HUNTING AND TRAPPING.—Instructions with diagram and directions for making trap, also *How to Train Animals*, including many amusing and wonderful tricks; in Nos. 13 and 14 of HANEY'S JOURNAL, of newdealers, or, on trial, *Three Months Free* by mail for 15c. JESSE HANEY & CO., 119 Nassau-st., New York.



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INVALID'S WHEEL CHAIRS, \$15 to \$40. The invalid, if having the use of the hands, can go anywhere, in doors or out. Invalid Carriages, all sizes, from \$40 to \$100. Patent Sedan Carrying Chairs, prices \$10 to \$18. Invalid Chairs and Carriages made to order to suit all cases. Send for Circular.

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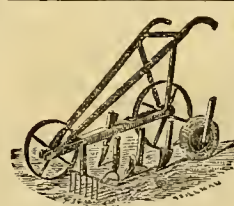
New and Rare Vegetables.

Having been the original introducer of the Hubbard Squash, Marblehead Mammoth Cabbage, and many other new things, I still continue to make the raising of the seed of new and rare vegetables a specialty, in addition to the standard kinds. Catalogues gratis to all.
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costs less, outlasts, handles than the old cumbersome one. Equalizes the draft. Perfect evener. Prevents chafing, &c., &c. A trial gives its aid and benefit to horses evident. Price complete, \$4.00. Send for a circular. B. HASKELL, Gen'l Agent, 190 Duane-st., New York.



CRAWFORD'S HAND GARDEN CULTIVATOR, a new and valuable Horticultural Machine, warranted to save the Labor of four to six men. Manufactured by

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\$10 to \$20 PER DAY SURE, and no risk. Agents wanted everywhere, on commission or by the month, to sell our *Patent Everlasting White Wire Clothes Lines*. For full particulars, address the AMERICAN WIRE CO., 75 William-st., New York, Or, 16 Dearborn-st., Chicago, Ill.

SALESMEN WANTED to travel and sell by sample the new and superior Hand Printing Stamp, &c. Remunerative and permanent situations. H. H. RICHARDS & CO., 413 Chestnut-st., Philadelphia.

MAMMOTH PLOW.—To turn a furrow twenty-two inches—with a subsoil plow to follow, twenty-four inches—made to order, cost \$100. Price for both, \$140. BENJAMIN HAINES, Elizabeth, N. J.

Improved Gal'd Iron Trellises for Shrubs, Strawberries, &c., have been tried and pronounced good. Write for Illustrated Circular to *Wilcox, Crittenden & Co.*, Middletown, Ct.

JOHN S. COLLINS, Moorestown, New Jersey, continues to fill orders for plants promptly.

THE GREAT PURIFIER.

CRESYLIC SOAP

AND

Saponaceous Compounds.

Disinfectant, Insect Destroyer, Preventive of Fungus, etc.

Frequent mention has been made in the columns of the *American Agriculturist* of Cresylic Compounds, as being valuable for destroying insects on animals and plants, and for other purposes. For some months past we have been investigating the merits of these preparations, with the following results.

Cresylic Acid is extracted from gas-tar, to which it gives the peculiar odor perceived on burning the tar. It has been used to a limited extent by chemists and physicians, for various purposes, and their experiments have shown it to possess remarkable properties as a disinfectant, and in destroying insect life and fungus growth. In its ordinary form it could not be readily applied, and hence was not available for common use. About two years since, Messrs. JAMES BUCHAN & CO., of New York, well-known as extensive manufacturers of family soaps, conceived the idea of combining this acid in saponaceous compounds. By long and careful experimenting, they succeeded in producing soaps in various forms, possessing the active properties of this acid, and thus bringing it within the reach of all classes. These compounds have been patented.

We have watched with great interest the results of various applications of these compounds, knowing that if successful, they would be of incalculable benefit to the community. By tests made under our own supervision, and the reports of careful observers, we believe it to be established that these Cresylic Compounds are

1st. Complete Disinfectants.—They not only remove all noxious odors from sinks, privies, stables, etc., but will destroy all infection in clothing, rooms, etc., washed with their solution. Thus, contagion from Small Pox, Typhus Fever, Cholera, and other diseases, may be effectually prevented. They are used in the New York and other Hospitals for these purposes.

2d. Insect Destroyers.—An animal washed with Cresylic Soap will be entirely freed from all vermin. It will destroy ticks on sheep, fleas on dogs, lice on cattle or poultry, roaches, ants, bedbugs, etc., in rooms. It repels flies from animals, and thus is especially useful in cases of wounds or sores from any cause.

So far as tried, it has been efficacious in repelling insects from plants. We desire to have it more thoroughly tested for this purpose, and reports to be made. We believe it will free plants from Aphides, bark lice, slugs, bugs, caterpillars, striped bugs, curculio, and the whole host of minute but powerful enemies in the garden and fruit yard.

3d. Preventive of Fungus Growth.—On this point we ask for further experiment. We feel confident this soap, properly applied, will prevent smut in wheat, mildew on vines, and similar parasitic growth, and trust that experimenters will furnish the result of their trials.

4th. Cleaning Sores, etc.—For washing ulcers and other foul sores, and preventing gangrene in wounds, etc., Cresylic Soap is, we believe, unequalled. We know also that it has been successful wherever used, for foot rot in sheep, and mange, itch, ring-worm, and other skin diseases.

From numerous RECOMMENDATIONS of Cresylic Compounds, the following are selected as being specially valuable.

FIVE POINTS HOUSE OF INDUSTRY, 155 Worth St. New York, Nov. 15, 1867.

Messrs. BUCHAN & Co.—*Gentlemen*—Some months since we purchased a large building which had been used as a tenement establishment for thirteen years, and was occupied by some ninety families. We tore away partitions, turning between three and four hundred rooms into less than one hundred. We found the walls and floors perfectly infested with vermin. We used freely in cleansing the CRESYLIC SOAPS, manufactured by your firm, and with the very best results, as the bugs, etc., have entirely disappeared. We propose to continue its use in cleaning our dormitories, hoping then to keep clear of a plague so common to all house-keepers in cities. S. B. HALLIDAY, Supt.

BROOKLYN, November, 1867.

M. C. EDEY, Agent for Sale of JAMES BUCHAN & Co's, Cresylic Soaps, etc.—*Dear Sir*—We have had the Cresylic Soap used in the Raymond Street Jail and County Court House, and in washing and cleansing prisoners' clothing cells, etc.; and we are so much pleased with its cleansing

disinfecting and insect-destroying effects, that we not only continue its use in above places, but recommend that it should be generally used for those purposes.

JOHN L. RYDER, } Committee on Jails
STEPHEN CLARK, } of Supervisors of
D. S. VOORHIES, } Kings County, N. Y.

CORPUS CHRISTI, Texas, March 15, 1868.

Messrs. JAMES BUCHAN & Co.—*Gentlemen*: Your Sheep Dip is wonderful in its effects. I have dipped 2,150 head with nine months' fleeces on their backs. It is now three weeks since, and no scratching as yet. Your Dip is far superior to tobacco, not so disagreeable or unpleasant, much less trouble and more permanent.

I have used it on horses when diseased with a species of mange or itch, and it has the same good effect as on sheep. F. W. SHAEFFER.

On the use of disinfectants, the following is the testimony of Dr. ELISHA HARRIS, Registrar of the Metropolitan Board of Health, New York City:

"THE DISINFECTING AND ANTISEPTIC POWER OF GOOD CARBOLIC ACID" IS SO GREAT THAT ONE PART OF IT TO FIFTY OR ONE HUNDRED PARTS IS SUFFICIENT FOR ORDINARY PURPOSES."

* CRESYLIC ACID is the active property of Carbolic Acid.

Desiring that our readers should be benefited by the extended introduction of what we believe to be so valuable, we have established a general agency for the sale of these compounds, at our branch office, No. 41 Park Row, and are prepared to fill orders at wholesale or retail, at the following prices.

Sheep Dip, for Curing Scab and Destroying Insects on Sheep.

5 lb Canisters.....	\$1.25
10 " " ".....	2.25
50 " Kegs.....	10.00
200 " Bbls.....	35.00

Proportions are 1 lb Dip to 5 gallons water for 5 to 10 Sheep, if they are very large and heavily fleeced. For ordinary sized animals, or those recently shorn, 1 lb Dip will take 9 to 10 gallons water. The solution must be graded according to the age and condition of the animal.

Plant Protector.—In solution for destroying and repelling insects from Trees or Plants.

In 1 lb. Canisters, @50 cts.; in 3 lb. Canisters, @ \$1.00; larger packages same price as Sheep Dip. See above.

Cresylic Ointment, for Cure of Foot Rot, &c. In solution for killing Insects, &c., on stock. In 3 lb. Canisters, \$1.

Carbolic Disinfecting Soap.—In tablets for convenient use in washing Horses, Dogs, Pigs, &c., destroying Insects of all kinds, protecting from Flies, curative of Sores, Scratches, and Chafes of all kinds. In boxes, 3 dozen tablets, \$3.00; in boxes of 1 lb bars, 10 each, \$1.00.

Cresylic No. 1 Soap.—10 Bars. For all common uses in the House and Laundry; 24 lb boxes, 13 cts. per lb; 60 lb boxes, 12 1/2 cts. per lb.

Cresylic Laundry Soap.—A finer Soap, for the Laundry, and for the Bath, etc.; 60 lb boxes, 14 cts. per lb. 24 lb boxes, and in 10 paper boxes containing 6 lbs. each, packed in a case, 15 cts. per lb. Address orders to

ORANGE JUDD & CO.,
41 Park Row, New York.

DRAINING FOR PROFIT AND DRAINING FOR HEALTH.

By GEO. E. WARING, JR.,

Engineer of the Drainage of Central Park, New York.

CONTENTS.

LAND TO BE DRAINED; HOW DRAINS ACT; HOW TO MAKE DRAINS; HOW TO TAKE CARE OF DRAINS; WHAT DRAINING COSTS; WILL IT PAY? HOW TO MAKE TILES; RECLAIMING SALT MARSHES; HOUSE AND TOWN DRAINAGE.

EXTRACTS FROM NOTICES BY THE PRESS.

He (the author) describes the action of draining upon the soil, the construction of single drains and systems of drains, the cost and the profit of thorough drainage, the making of tiles, and the reclaiming of salt marshes, treats sensibly of malarial diseases, and closes with a chapter which should be widely read, on house drainage and town sewerage in their relations to the public health. [Portland (Me.) Press.

Nowhere does this book merit a wider circulation than in the West. Every year adds to the thousands of dollars lost to this State from want of proper surface drainage, to say nothing of the added gain to result from a complete system of under-drainage. This book will prove an aid to any farmer who may consult it. [Chicago (Ill.) Republican.

A Book that ought to be in the hands of every Farmer. SENT POST-PAID, - - - - PRICE, \$1.50.

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245 Broadway, New York.



Quinby's Bee Keeping.

By M. QUINBY, Practical Bee-keeper. Fully Illustrated. This book gives the result of 35 years' of successful experience—with directions for all contingencies that can ordinarily occur; treating of Breeding, Movable-Comb and other Hives, Pasturage, Robbing, Feeding, Swarming, Queens, Diseases, Anger, Enemies, Wax, Transferring, Sagacity, Wintering, Care of Honey, Italian Bees, Purchasing, etc. Bee-keepers will find this new work of Mr. Quinby's fully up to the times in all practical matter.

Sent Post-paid.

Price \$1.50.

Gratifying Opinions of the Press.

From the *Christian Intelligencer*.

Quinby's Work is the very best. It has long been regarded as of the highest authority in the matters concerning which it treats."

From *Moore's Rural New Yorker*.

"This is a newly written and illustrated edition of Mr. Q.'s former work. That has proved of value to thousands of Bee-keepers, and this, with its riper experience and added knowledge, can not fail of giving better satisfaction. Thirty-five years experience!—What beginner in bee-keeping will not bring this to his aid? We notice the author has no Patent Hive to introduce, and expresses his opinions freely on the merits and demerits of the various hives seeking popular favor."

From the *Vermont Farmer*.

"The book is written in familiar style, with the endeavor to be practical rather than scientific, thereby making it a guide to the tyro in Apian knowledge, as well as a standard work of reference for the more experienced bee-keepers."

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"All bee-keepers should have this manual, and others may read it as a book of wonders."

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245 Broadway, New York.

FLAX CULTURE.

A NEW AND VERY VALUABLE WORK, consisting of full directions, from selection of ground and seed to preparation and marketing of crop, as given by a number of experienced growers. 8vo, paper. PRICE 50 Cents.

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PRACTICAL DETAILS fully given, from the Selection and Preparation of the SOIL, SETTING and CULTIVATION of the Plants, to PICKING, DRYING, PRESSING, and MARKETING the Crop. By Ten Experienced Cultivators. Illustrated with over forty engravings. Edited by PROF. GEORGE THURBER. 8vo, paper. PRICE 40 Cents.

TOBACCO CULTURE.

This is by far the most useful and valuable work ever issued on this subject. It contains full details for the Selection and Preparing of the Seed and Soil, Harvesting, Curing, and Marketing the Crop, with Illustrative Engravings of the operations. The work was prepared by FOURTEEN EXPERIENCED TOBACCO GROWERS, residing in different parts of the country. It also contains Notes on the Tobacco Worm, with Illustrations. Octavo, 43 pp., in neat paper covers. PRICE 25 Cents.

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Practical Details, given very plainly by Seventeen Onion Growers of long experience, residing in different parts of the country. No more valuable work of its size was ever issued. Octavo, 32 pp. Neat paper covers. Price 20 cents.

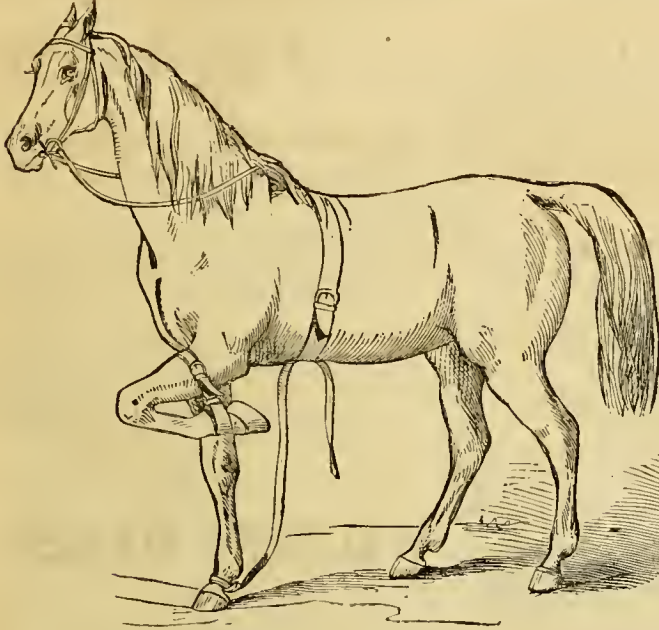
NEW-YORK;

ORANGE JUDD & CO., 245 Broadway

HINTS TO HORSE-KEEPERS.

A COMPLETE
MANUAL FOR HORSEMEN.
BY THE LATE HENRY WILLIAM HERBERT. (FRANK FORESTER.)

There are very few books which all who own or use the horse, can peruse with greater satisfaction than this. For indicating the principles which should guide one in breeding, buying, training, and using horses, it stands unrivalled among American books.



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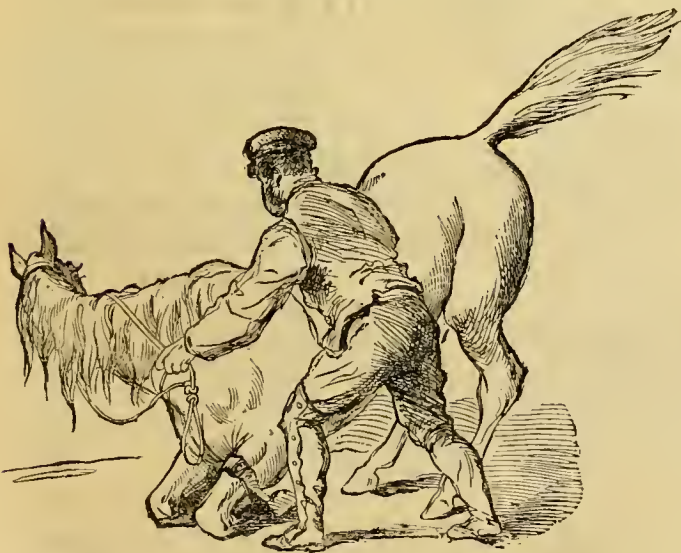
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BEAUTIFULLY ILLUSTRATED. . . SENT POST-PAID. . . PRICE, \$1.75.

ORANGE JUDD & COMPANY, 245 Broadway, New York.

(Advertisements on this page, \$2.50 per Agate Line of Space.)

ESTABLISHED 1861.

THE
**GREAT AMERICAN
 TEA COMPANY**
 RECEIVE THEIR
TEAS BY THE CARGO
 FROM THE
BEST TEA DISTRICTS
 of
CHINA and JAPAN,
 and sell them in quantities to suit customers
AT CARGO PRICES.

To give our readers an idea of the profits which have been made in the Tea trade, we will start with the American houses, leaving out of the account entirely the profits of the Chinese factors.

1st.—The American house in China or Japan makes large profits on their sales or shipments—and some of the richest retired merchants in the country have made their immense fortunes through their houses in China.

2d.—The Banker makes large profits upon the foreign exchange used in the purchase of Teas.

3d.—The Importer makes a profit of 30 to 50 per cent in many cases.

4th.—On its arrival here it is sold by the cargo, and the Purchaser sells it to the Speculator in invoices of 1,000 to 2,000 packages, at an average profit of about 10 per cent.

5th.—The Speculator sells it to the Wholesale Tea Dealer in lines at a profit of 10 to 15 per cent.

6th.—The Wholesale Tea Dealer sells it to the Wholesale Grocer in lots to suit his trade, at a profit of about 10 per cent.

7th.—The Wholesale Grocer sells it to the Retail Dealer at a profit of 15 to 25 per cent.

8th.—The Retailer sells it to the Consumer for ALL THE PROFIT HE CAN GET.

When you have added to these EIGHT profits as many brokerages, cartages, storages, cooperages and wastes, and add the original cost of the Tea, it will be perceived what the consumer has to pay. And now we propose to show why we can sell so very much lower than other dealers.

We propose to do away with all these various profits and brokerages, cartages, storages, cooperages and wastes, with the exception of a small commission paid for purchasing to our correspondents in China and Japan, one cartage, and a small profit to ourselves—which, on our large sales, will amply pay us.

By our system of supplying Clubs throughout the country, consumers in all parts of the United States can receive their Teas at the same price (with the small additional expense of transportation), as though they bought them at our warehouses in this city.

For manner of getting up Clubs, see former advertisement in this paper.

Parties sending Club or other orders for less than thirty dollars had better send a Post-office draft or money with their orders, to save the expense of collections by Express, but larger orders we will forward by express, "to collect on delivery."

Hereafter we will send a complimentary package to the party getting up the Club. Our profits are small, but we will be as liberal as we can afford. We send no complimentary packages for Clubs less than \$30.

Parties getting their Teas of us may confidently rely upon getting them pure and fresh, as they come direct from the Custom House stores to our Warehouses.

We warrant all the goods we sell to give entire satisfaction. If they are not satisfactory, they can be returned at our expense within 30 days, and have the money refunded.

The Company have selected the following kinds from their stock, which they recommend to meet the wants of clubs. They are sold at cargo prices, the same as the Company sell them in New York, as the list of prices will show.

PRICE LIST OF TEAS:

OOLONG (Black), 70c, 80c, 90c., best \$1 3/8 lb.
 MIXED, (Green and Black), 70c., 80c., 90c., best \$1 per lb.
 ENGLISH BREAKFAST (Black), 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
 IMPERIAL (Green), 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
 YOUNG HYSON (Green), 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
 UNCOLORED JAPAN, 90c., \$1, \$1.10, best \$1.25 per pound.
 GUNPOWDER, (Green), \$1.25, best \$1.50 per pound.
 Consumers can save from 50c. to \$1 per pound by purchasing their Teas of this Company.

COFFEES ROASTED AND GROUND DAILY.

GROUND COFFEE, 20c., 25c., 30c., 35c., best 40c. per pound.
 Hotels, Saloons, Boarding-house keepers and Families who use large quantities of Coffee, can economize in that article by using our FRENCH BREAKFAST AND DINNER COFFEE, which we sell at the low price of 30c. per pound, and warrant to give perfect satisfaction. ROASTED (Unground), 30c., 35c., best 40c. per lb. GREEN (Unroasted), 25c., 30c., 35c., best 35c. per lb.

NOTICE OF THE PRESS.

From the American Agriculturist.

THE GREAT AMERICAN TEA COMPANY.—To Queries.—Before admitting their advertisement, we learned that a large number of our clerks and others had for several months been buying their Tea and Coffee from this Company, without its being known who they were, and that they had been highly pleased with their purchases, both as to quality and price, and were all recommending their friends to the same course. As we have published the advertisement for many months, and received no complaints, we conclude "there is no humbug about the establishment."

N. B.—INHABITANTS OF VILLAGES AND TOWNS WHERE A LARGE NUMBER RESIDE, BY CLUBBING TOGETHER, CAN REDUCE THE COST OF THEIR TEAS AND COFFEES ABOUT ONE-THIRD, (BESIDES THE EXPRESS CHARGES), BY SENDING DIRECTLY TO "THE GREAT AMERICAN TEA COMPANY."

CLUB ORDER.

SPRINGFIELD, Ill., Sept. 16, 1867.

TO THE GREAT AMERICAN TEA COMPANY,
 31 and 33 Vesey Street, New York.

Please send me by Merchants' Union Express the following bill of Tea, &c.

1 lb. Imperial.....	S. Lanphear.....	at \$1.25.....	\$1.25
1 Black.....	".....	at 1.00.....	1.00
10 Java Coffee, raw.....	".....	at 35.....	3.50
1 Imperial.....	M. M. Lanphear.....	at 1.25.....	1.25
1 Black.....	".....	at 1.00.....	1.00
10 Java Coffee, raw.....	".....	at 35.....	3.50
3 Imperial.....	B. B. Lloyd.....	at 1.25.....	3.75
1 Imperial.....	Horace Morgan.....	at 1.25.....	1.25
1 Black.....	".....	at 1.25.....	1.25
2 Imperial.....	Simon String.....	at 1.35.....	2.50
5 Black.....	Wm. Bishop.....	at 1.00.....	5.00
3 Uncolored Japan, J. Marr.....	".....	at 1.25.....	3.75
8 Java Coffee, raw, L. A. Allea.....	".....	at 35.....	2.80
4 Imperial.....	A. Morris.....	at 1.25.....	5.00
1 1/2 Imperial.....	Thos. Higgins.....	at 1.25.....	1.88
1 1/2 Black.....	".....	at 1.00.....	1.50
5 Black.....	A. Hickox.....	at 1.00.....	5.00
3 Black.....	J. Farley.....	at 1.00.....	3.00
2 Imperial.....	".....	at 1.00.....	2.00
1 1/2 Imperial.....	Mr. Carey.....	at 1.25.....	1.87
1 1/2 Black.....	".....	at 1.00.....	1.50
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{ \$1.50 PER ANNUM, IN ADVANCE.
SINGLE NUMBER, 15 CENTS.
4 Copies for \$5; 10 for \$12; 20 or more, \$1 each.

Entered according to Act of Congress in May, 1869, by ORANGE JUDD & Co., in the Clerk's Office of the District Court of the United States for the Southern District of New-York.

VOLUME XXVIII.—No. 6.

NEW YORK, JUNE, 1869.

NEW SERIES—No. 269.



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THE PAST AND THE PRESENT.—DRAWN BY EDWIN FORBES.—Engraved for the American Agriculturist.

The little fellow sits upon the decaying earth-work, quite bewildered; he looks in vain for the martial display which only a few years ago so delighted him, and instead of seeing the sun reflected from the bayonets of the marching soldiery it now gleams only from the well-used implements of peaceful husbandry. The sheep no longer fly affrighted to the shelter of the woods, but rest among the relics of former strife. All over the world agriculture removes the scars of war. Kind mother earth forgives the disfigurement caused by the march of armies,

the building of breastworks, and the plowing of cannon balls. The traces of war are obliterated by the furrow turned by the plow, and the olive is not more the sign of peace than is the harvest of corn or of cotton. Let, then, the earth-works be levelled and an improved agriculture make glad the waste places. It is very gratifying to see how rapidly the more southern States are awaking to a new system of things, and the increase in the number of agricultural papers, as well as their generally excellent character, is a strong indication of progress.

Smaller farms and a mixed husbandry bring a dense population, without which schools, churches, social intercourse, and all the accessories of general intelligence, are not possible. Some of these States are making great efforts to induce immigration, and a few years hence the census will doubtless show not only a large increase in population but a great increase in the value of their agricultural products. The States north of these will be benefited by the receipt of fruits and garden products, which will soon be forwarded in great abundance.

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AMERICAN AGRICULTURIST.

NEW-YORK, JUNE, 1869.

What a glorious month June is! We have much more of sunshine than in any other month, and this is usually accompanied by heat and moisture in such degrees, that the whole country has an atmosphere like a green-house, and vegetation of all kinds makes its most rapid growths. The chilly days and cold nights of May have past; the backward corn now makes amends for its tardy development, loses the sickly yellow hue, and puts on the bright green of health. Wheat pushes up its bearded ears, and the clover heads make the meadows rosy. Long dormant seeds are warmed to life, and plants spring up unbidden wherever the fresh mould has been stirred. The pastures are in their best condition, and the distended udders, full pails, thick cream, and golden butter, make us glad. Fruits are ripening, and fresh vegetables appear in increasing variety upon the table. It is the month of Roses, and with the queen of flowers comes a charming throng bearing, some chalcies of beauty, others vials of odors, to crown with radiance and fragrance the measure of the month.

June is no play-time. Work, hard work, is the order of the day. All this energy of Nature must be directed, checked, taken advantage of, utilized. If corn grows, so will weeds. Every additional pound of milk makes more work for us in the dairy. In almost every department the farmer may have more work than he can do, and to accomplish well the most important, all the labor must be thoroughly systematized.

Hints About Work.

Corn.—Early varieties will mature if planted the first week in June in all ordinary seasons, and as there are often drawbacks and hindrances, every farmer should have some early corn which he can plant if necessary. Large crops of even very small kinds may be secured if well manured and planted close enough. With the small kinds of corn we are apt to err in planting too far apart, just as with the large sorts we fail in the opposite way. The secret of easy, successful corn culture is allowing no weeds to grow—at least much beyond the seed leaf—before the corn is so large that horse cultivation is prevented. Weeds are killed both by stirring the soil in dry weather and by burying them.

Corn-fodder.—Corn may be sown up to the middle of July, or even later; and that which is not needed for green fodder should be cut and cured for winter use before it begins to turn yellow.

Roots.—It is not too late for fair crops of man-gels, carrots, or parsnips. They should be sown as early in the month as possible. Sowing Swedish turnips (ruta-bagas), is usually set down for the 20th of June. They may be sown either before or after that, as convenient. Use one or two barrels of good superphosphate to the acre in the drill, according to the condition of the soil. The drills should not be less than two feet apart. Farmers ought to put in more roots, and ruta-bagas are the best to begin with. They are easily sold at a good price in our large markets, and are invaluable for cows, hogs, and sheep, in winter and spring.

Cabbages.—Sow seed for main crop. They are equal or superior to roots as feed for animals, and succeed well, especially upon stiff or clayey soils.

Green manure crops.—Clover is the best. Plow it under in full blossom. Buckwheat may be sown at any time, and if quickened by 100 or 200 lbs. of guano to the acre, may be plowed in in time to sow and turn under a second crop before frost, even on very poor land. Corn is one of the best crops for green manuring, though awkward to plow under. Sow in drills a foot apart, or broadcast, and when it fassels out, roll or drag it flat with the rows if drilled, and turn it in as it is laid with a large plow.

Fodder crops.—Besides corn for fodder, sorghum, millet, and Hungarian grass, offer useful substitutes for hay, or for feeding dry. They should, however,

be cut early, before the outside of the sorghum or the tough seed envelops of the Hungarian millet are hard, as it is from these indigestible substances that harm arises, if it comes at all.

Grass.—It is often a question which meadow to mow first. Usually, we prefer to cut that first which is newest seeded, because the grass and clover will start up at once, and no harm will result to the roots should a drought come on next month. Where there are a great many daisies, they must be cut when just coming into blossom. This not only destroys many seeds, but the daisies make very good hay; whereas, if cutting be delayed, in a very short time they are quite worthless, and every seed is ripened. Orchard grass and June grass precede Timothy, and accompany clover in time of fitness to cut. Red-top and grasses of its kind are later, and fields where red-top is in excess are usually best left until the last. It is much better to cut grass a little too soon than too late. The hay is a little lighter, but it is all eaten; otherwise, the manure heap is increased at the expense of the mow. The experiences of last summer warn us to provide hay caps; and those who were obliged to get in their hay before it was dried to death, according to custom, may also have learned a lesson not to overdry hay. That cured as much as possible in the cock is sweetest and best.

Pastures.—Be careful not to overstock those pastures depended upon for the summer. Top-dressings of bone-dust, guano, ashes, gypsum, superphosphate, or fish manure, will tell at once.

Brush Pastures, or those on which bushes of various kinds are gradually encroaching, may be nearly cleared in one or two seasons by feeding down with sheep. Cut the brush with a bush-hook, or scythe, and soon after turn the sheep in. They will gnaw down the succulent young growth, kill the roots of the bushes, and thrive upon the diet. It is best, however, to decidedly overstock the pasture for the most thorough work, the animals being kept on but a few days at a time through the hot season.

Potatoes.—Top-dress with gypsum, or gypsum and ashes. Use the horse hoe as often as the soil is compacted by heavy rains, very dry, or weedy, until the vines would be injured by the operation; then clean up between the rows with a Share's horse-hoe, or other similar double-mould-board affair, and leave them, except as you go through, frequently, if necessary, to hand-pull the weeds.

Peas sowed after the 10th of June, (Lat. 41°) will be less productive, but not attacked by the weevil.

Tobacco.—Water seed-beds with dilute manure water. Prick out crowded plants, so as to make them grow stocky. Prepare the field to be ready for transplanting by the 20th, or before.

Implements.—Have a grindstone well hung, to be run by the foot. Keep axes, hoes, mattocks, spades, and all earth cutting tools, whether for the garden or the field, sharp all the time. Buy the best and lightest steel tools, and the most improved and superior implements of all kinds. Keep them housed. See description of tool-sled on page 212, and make one for moving implements to and from the field. Attend to repairs as soon as they are in the least degree needed. "A stitch in time," etc.

Weeds.—Destroy while in the seed leaf, if possible. Mow those which grow rank in the fence rows and elsewhere. Repeated mowings will kill most, and cutting off at the ground will finish almost every one in one season. Even Canada thistles will succumb after four or five cuttings at the surface of the ground, and on some soils with less.

Poultry.—Give young chickens free range of the garden, and feed well. They will take many insects. Even chickens for early marketing should not be confined. They must be well fed. Give them some meal, like pork scraps, cut fine, and soaked over night, and keep them growing fast. Confine old ducks, not needed as breeders, as soon as they stop laying, and give them fattening food. They will never be tenderer than if fattened and eaten at once, and that is saying little enough.

Swine.—Young pigs are useful in an orchard. Keep store pigs in pens, working over and tramp-

ing the manure from the stables, together with sods, bog hay, weeds, and last year's old cornstalks.

Sheep.—See that they are not scalded by the hot sun on their bare backs after shearing. Give new shorn sheep good shelter, both from cold and sunshine, until they have become used to their naked condition. Two weeks after shearing, ticks will usually be found upon the lambs. These, at least, should be dipped twice or three times, a week apart. Once dipping the old sheep will commonly answer. The best dip is unquestionably carbolic soap.

Cows.—Feed enough must be prepared to keep up the flow and the quality of the milk through wet weather or through droughts. Pea vines or clover, cut and fed at evening in the yards, may fill out the time between the cutting of wheat and rye for soiling, and the time when corn is ready to cut, which will not be before the 1st to the 15th of July.

Working cattle must have good, long nooning, if they are worked hard, and be well fed. Look out for yoke galls, and apply wet cloths at night and on Sundays. Foot-sore cattle must have rest in clean stables, where cut grass can be fed to them.

Horses at pasture thrive at this season; later, flies torment their flesh off. Mares with their foals should be pastured by themselves.

Work in the Horticultural Departments.

While the month of June brings abundant work, it gives us also rewards for our labors. Strawberries, early vegetables, and the choicest products of the flower garden, come with the warm days of June. The soil is now well warmed, and not only do established plants grow rapidly, but seed germinates with surprising quickness. Those who have been obliged to delay sowing, or who lost their early crops in the cold storms of May, can still sow seeds of most crops with good prospect of success.

Orchard and Nursery.

Young trees set this spring will need looking after. Much can be done towards giving them the desired shape, by rubbing off shoots which start where limbs are not wanted. Stop the growth of useless limbs, and nearly all pruning may be avoided. Shapeless trees, with crowded heads, come from neglect in their youth.

Pinching is preventing the prolongation of a branch by nipping out its "growing point,"—the young and tender end—by means of the thumb and finger. Where a shoot appropriates the nourishment to the detriment of others, pinch it.

Grafts will need similar care to that required by young trees; indeed, a graft is only a young tree, planted in the wood of another tree instead of in the soil. Where two cions were inserted, and they are likely to become crowded, remove the weaker. Govern the growth by pinching.

Budded stocks need similar attention. The shoot from the bud is often very vigorous, and the newly formed wood is not sufficiently firm to withstand the winds without staking.

Pruning.—This month is generally preferred for the removal of large limbs. We have, in previous numbers, given the precautions to be observed.

Cultivate young orchards, and keep the soil mellow. If there are crops between the rows, keep them well worked.

Thinning cannot be too often advocated, as it is very generally neglected. There are but few trees which fruit at all that would not be benefited by the removal of one-half of the crop. The sooner it is done, the better.

Seed-beds, especially of evergreens and deciduous forest trees, will require shading. This may be done by a frame of lattice-work, by sticking branches over the bed, or by placing a horizontal frame-work over it, upon which are placed branches of evergreens or brush.

Insects are most numerous and destructive this month. Use vigilance, and let patent remedies alone. Go among the trees frequently, and remove nests of caterpillars. The eggs of some caterpil-

lars are laid upon the leaves, and a whole colony may be found upon a small branch. It will be better to cut this off and destroy the insects, than to allow them to spread over the tree.

Borers.—The parent of the borer deposits its eggs upon the trunk, near the ground, and the young hatch and eat their way into the wood. Occasional rubbing with a corn cob is practised, but a more certain preventive is to wrap the base of the tree with stiff paper, the lower edge of which should be below the surface of the soil.

Cureulio.—We must repeat the often told story. The cureulio can only be successfully controlled by daily jarring the trees, catching the insects on a sheet, and destroying them.

Slugs will appear on the leaves of the cherry and pear. They are small, green, and slimy fellows, of a repulsive aspect. Lime, or dry dust, shaken from a bag of loose fabric, will destroy them.

Plant Lice.—See articles among "Basket" items.

Fruit Garden.

Strawberries, if they have not already been mulched, should have the surface between the rows covered with some material to protect the fruit from being soiled. Salt or bog hay, straw, or even cornstalks, may be used. Some useful directions for those who pick fruit for market will be found on page 168, last month.

Blackberries.—The new canes should not be allowed to grow higher than 4 or 5 feet. Pinch them, and an abundance of branches will be thrown out, which are to be stopped by pinching when they are about 18 inches long.

Raspberries.—Let only four new canes grow to a stool, and remove all others, unless needed for planting. Give the new growth a chance to develop, which may be done by a little care in training. For several methods of training, see page 219.

Currants.—Mulehng around the bushes will be of great service if the weather is dry. The best remedy for the attacks of the currant worm is powdered white hellebore.

Grape Vines.—It cannot be too often repeated that, to get a strong and vigorous vine, a newly planted one should, the first season after planting, bear but one shoot. Rub off all the rest, and keep the one shoot tied to a stake. Do not let young vines overbear. Two bunches to a shoot are enough, and one is generally better than two. Use sulphur freely upon the first appearance of mildew.

Insects will be troublesome. Hand-pick for the large beetles and worms that are found upon grape vines. See notes on the Orchard for other hints.

Kitchen Garden.

Hoe and Rake will be in constant requisition. Several forms of hand weeders are preferable to the common hoe. Whatever the implement selected, let the work be thoroughly done, and before a stubborn growth of weeds makes it hard work. A sharp steel rake used frequently will save much hoeing, as it will kill the weeds just as they are germinating.

Seeds of many things will need to be sown to keep up a succession as well as to replace those which have failed. Even as late as the first of June the majority of garden vegetables may be sown at the North, and produce fair crops.

Asparagus.—Stop cutting when peas are ready, and let it grow. Hoe over the bed, if weedy, and if there is any manure to spare, apply it.

Beans.—Continue to plant the bush sorts. See article on Lima Beans on page 217.

Beets.—Keep well weeded, and thin as soon as large enough to handle. The market gardeners sell the young beets that are thinned out for enough to pay for the labor. They are much prized as "greens" by those who know how good they are.

Cabbages.—Transplant the early sorts from the seed-bed, and sow late varieties. Those that were properly forwarded will be ready for the market or table. As soon as the crop is off, prepare the land for some other.

Carrots may yet be sown. This crop, when young, needs especial care to keep free from weeds.

Celery.—The young plants in the seed-bed should not become crowded or weedy.

Corn.—Sow for a succession every two weeks. If late in the season, sow early varieties.

Capsicums, or Peppers.—Set in rows, two feet apart, with fifteen inches between the plants. Select a warm and rich spot, and give good cultivation.

Cucumbers.—Make well-manured hills, about four feet apart, and put in a plenty of seed. When the plants are strong enough to be beyond injury by bugs, thin out to three in each hill. We have given so many devices for keeping off the "striped bug," that it is unnecessary to repeat them.

Egg Plants, like peppers, need rich soil and a warm situation. They repay extra manure and care. The same "green worm" that attacks the tomato will prey upon the egg plant.

Endive.—Transplant, and sow for a late crop.

Lettuce for summer use does best in a somewhat shaded and moist place. The India is the best.

Melons need the same treatment as cucumbers.

Onions.—No crop needs more careful cultivation. See article in April last. Where onions are marketed, they often pay better if sold when half grown than if allowed to ripen.

Parsnips.—Continue to cultivate until the growth of leaves prevents working between the rows.

Peas.—Plant succession crops. Put brush or other support to those that need it.

Radishes.—Seed may be sown for a late supply.

Rhubarb.—Cut away the flower stalks as soon as they show themselves. Stop pulling, and let the plants rest as soon as fruit comes.

Ruta-bagas, or the French turnip, may be sown late in the month. Dust the plants with plaster and ashes as soon as up, to keep off insects.

Salsify may still be sown, but the roots will not be so large as if put in earlier. The treatment is in all respects the same as that of carrots.

Spinach.—The common sorts are not so well suited to hot weather as the New Zealand, but a fair crop may be had if the weather is not too dry.

Squashes.—See last month's notes for directions.

Sweet Potatoes.—At most places at the North the first week in June is early enough to set them. The preparation of the ridges was given last month.

Tomatoes.—Set out plants. Keep well hoed. In the garden, some support is required, which may be a slat supported upon crooked stakes, a low wire trellis, or the plants may have a hoop support like that shown on page 219. In field culture, the plants are allowed to fall over by their own weight.

Flower Garden and Lawn.

Lawns.—To obtain a velvety surface, the grass must be clipped frequently. See last month's notes for remarks on lawn mowing machines.

Annuals may be sown, and the tender ones will come on rapidly, now that the soil is warm. Transplant or thin out those already up.

Bedding Plants, of the more delicate kinds, flourish better if put out now than if planted earlier. This is especially the case with Heliotropes, etc.

Specimen Plants, from the green-houses, may be used to ornament the grounds. The pots should be set in the ground up to their rims. Oranges, Oleanders, and the like, may be turned out of the pots and planted in the borders, but they must be taken up and potted quite early in autumn.

Fuchsias are only satisfactory in the open ground where they have considerable shade.

Tuberose.—Procure bulbs that have been started under glass, if possible, but if dry bulbs are set, give them a warm and rich place.

Bulbs.—Tulips, Hyacinths, and other spring blooming ones, may be left from year to year, if no regard is had to the quality of the bloom. To obtain the finest flowers, the bulbs should be taken up as soon as the leaves show signs of decay.

Spread in a shed, and when the leaves are dry, remove them, and store the bulbs in a cool, dry place until time to plant—September or October.

Roses.—Cut back the Remontants as soon as they have done flowering. Remove faded flowers from the Everblooming varieties. Keep the new shoots of the climbing varieties trained up to the trellis. See article on Roses on page 168, last month.

Sticks and Strings will be in constant requisition if proper neatness is preserved. Manage to have supports of all kinds as inconspicuous as possible.

Feeds should never appear in the flower garden. Use the bayonet or the lance-headed hoe and narrow rake to work among the plants, and where very close together, a hand-weeder will be found useful.

Green-house and Window Plants.

Every thing that is to come out at all will be placed outside this month, and the sooner repairs are made, the better. The plants left in the house should not suffer from neglect. Those outside will need care in watering. Some must have shade during the greater part of the day, and all should be so placed that they will not be injured by high winds. Provide for potting soil, which, for general purposes, is best when made of decayed sods and well-decomposed manure, or rotted refuse hops.

Mowing Machine Premium.—1,000 Acres of Grass Cut by the Buckeye.

Those who are getting subscriptions to the Agriculturist with a view to taking this splendid premium should fill them up and send them in as early in the month as possible. For their encouragement, we give the following memorandum, received from Gen. N. N. Halsted, one of the largest and most influential farmers of New Jersey, and President of the State Agricultural Society: "In May, 1859, I purchased a Buckeye mower of Adriance & Platt. It has cut on an average 100 acres of grass per year for my neighbors and myself, and has done its work well, though on stony ground. It has cost in repairs \$5.87 (about 53 cents a year). This, I think, is a good record of this mower's durability and economy." So it is; and it is one of the reasons why we choose the Buckeye Mowing Machine to place upon our premium list.

The New England Agricultural Society

announces that its next Fair will be held at Portland, Maine, on the 7th to the 10th of October. All entries must be made two weeks before the exhibition. Notice of intention to enter live-stock must be sent to S. L. Boardman, Augusta, Me., prior to August 18th. The Secretary of the Society is Col. Daniel Needham, of Groton, Mass. A liberal list of premiums is issued. No prizes are offered for trotting horses; but this whole subject is left with the trustees of the Maine State Agricultural Society. We earnestly commend to these gentlemen the perusal of the retiring address of President Faile, of the N. Y. State Society. The inducements offered by the Society in the form of prizes will settle the question whether or not there will be a con-course of professional gamblers, drunken and "lewd fellows of the baser sort" drawn together, as to a regular horse-race, or whether the exhibition will be one beneficial to the agriculture and the people of the State, and of New England. The scenes enacted at the fair at New Haven last year should be a warning.

Mole-plow Draining.

—An Arkansas correspondent asks whether he can drain a wet clay cotton soil by using a mole-plow?—Imperfectly, he can; satisfactorily, he can not. If the clay is stiff enough to hold its form and keep the plow track open, it will be a very simple matter to mould it into draining tiles, burning them in a cheap kiln, of the kind described in Waring's Book on Draining, and permanent benefit may be thus secured. The mole-plow is not a very cheap tool to work, and its effect is very temporary. The gully of the hill-sides complained of by our correspondent would be very greatly prevented by thorough underdraining, especially in connection with horizontal cultivation.

Fattening Steers.

—"C. S. Wilcox," Ash-tabula Co., O. If your pasture is very good, you will not find it necessary to feed grain to your steers, but they must be kept gaining well all the time, and a moderate quantity of corn meal or oil-cake would push them ahead faster. Oats are too high to feed profitably to fattening stock. A pair of yearlings weighing 1,580 pounds are remarkable, and it will pay to give them first-rate care and feed. It all depends on the quality of the pasture whether or not they will need grain before autumn.

AMERICAN AGRICULTURIST.

ORANGE JENN & Co., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies: Four to nine copies, \$1.25 each; Ten to nineteen copies, \$1.20 each; Twenty copies and upwards, \$1 each. Papers are addressed to each name.

AN EARTHQUAKE

would hardly awaken some people out of the drowsy dream-life they have always lived, or stir them from the "easy-go-along" gait they have always traveled. But these are not the sort of people that are found among the thousands upon thousands of wide-awake folks, who have helped send the American Agriculturist all over the land, from Nova Scotia to Darien, from Lower California to Alaska, all through the great Mississippi Valley, and to many foreign lands. And a large number of these wide-awake people are enjoying the reward of their efforts, in the form of splendid and valuable Premiums which they have received from this Office. (See list in next column.) Well, the year is nearly half gone, and

ON JUNE 30TH

we shall close up our general premium offers for this year, except for localities too distant to forward names by that time. As all our present readers, of course, belong to the wide-awake class, and as not quite all of them have yet obtained premiums, we write this to privately (very privately) remind them that there is ample time during the next thirty days to finish up all partially completed premium lists, and draw on us for the premiums offered. And those who have no partial lists begun can start and fill up new ones. We have a good supply of the excellent things named in the table in next column. THEY ARE EASILY OBTAINED! Large numbers

of Men, Women, and Children, have gathered names enough in a day or two, often by a few hours' effort, to secure an article for which they would gladly have worked weeks. Try it with a will and determination to succeed, and in nine cases out of ten you will be successful. Take a copy of the paper, exhibit it among neighbors and friends, in your own neighborhood and elsewhere, (for premium clubs need not be all at one post-office,) show what the paper is, what it is worth, how cheap it is, and in a brief time the desired number of subscribers can be gathered, and the premium secured. Just to help the matter along, and to accommodate those who wish to try the paper for six months, at 75 cents, we will count two subscribers for half a year as equal to one subscriber for the whole year, in supplying the premiums—that is, we will now make

Two Halves equal One Whole One.

[In this table are given the regular cash prices of each article, and the number of subscribers required at \$1.50 a year, to get it free, also at the lowest club rate of \$1 a year. For full descriptions of the articles see extra sheets, sent free.]

Table of Premiums and Terms, For Volume 28—(1869).

Table with columns: No., Names of Premium Articles, Price of Premiums, and Number of Subscribers required at \$1.50 and at \$1.00. Includes items like Alderney Bull, Cotswood Ram, Narseny Stock, Sewing Machine, etc.

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-two Premiums, Nos. 29, 30, 31, 61, 62, 63, 64, and 76 to 100 inclusive, will each be delivered FREE of all charges, by mail or express, (at the Post-office or express office nearest recipient), to any place in the United States or Territories. —The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance specified.

Read and carefully Note the following: (a) Get subscribers anywhere; all sent by one person count together, though from one or a dozen different Post-offices. But... (b) Say with each name or list of names sent, that it is for a premium list, and we will so record it... (c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. Any time, from now to June 30th, will be allowed to fill up your list as large as you may desire. The premium will be paid whenever you call for it... (d) Send the exact money with each list of names, so that there may be no confusion of money accounts... (e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer the premiums... (f) Specimen Numbers, Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, for every extra copy of the paper costs, with the

2c. prepaid postage, about 12 cents....(g) Remit money in Checks on New York Banks or Bankers payable to order of Orange Judd & Co., or send Post-Office Money Orders. If neither of these is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

If from any Cause one fails to get the larger premium desired, the names can be used for a smaller one.

A Full Description of the Premiums is given on an extra sheet; a copy will be sent free to every one desiring it. For New Premium 106, see page 32, January No. We have only room here for the following:

No. 42—Clothes-Wringing Machine.—A very useful, time-saving, strength-saving, clothes-saving implement, that should be in every family. The wringing of clothes by hand is hard upon the hands, arms, and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the garments.

No. 72.—Crandall's Improved Building Blocks furnish a most attractive amusement for children. Churches, Dwellings, Barns, Mills, Fences, Furniture, etc., in almost endless variety, can be built with them, and the structures remain so firm as to be carried about. The Blocks are put up in neat boxes, and with each box is a card giving many designs of buildings.

Nos. 76 to 81—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-seventh Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are put up in clean numbers, with full Index to each volume.—They are profusely illustrated, the Engravings used in them having alone cost about \$40,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from 16 to 27.

Nos. 82 to 87—Bound Volumes of Agriculturist.—These are the same as Nos. 76 to 81 above, but are neatly bound in uniform style, and cost us more for the binding and postage. Sent post-paid.

Nos. 88 to 99—GOOD LIBRARIES.—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any of the premiums 88 to 99 may select any books desired from the list on page 226, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post-Office, or Express office, as we may find it most convenient to send them.

No. 100—General Book Premium: Any one not desiring the specific Book premiums, 88 to 99, may select Books from list on page 226, to the amount of 10 cents' worth for each subscriber sent at \$1: or 30 cents for each name sent at the (ten) club price of \$1.20 each; or 60 cents' worth for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

A Few Dollars' worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to make their hands help their heads. Any good book will, in the end, be of far more value to a youth than to have an extra acre of land on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres than he would off from 50 acres without the mental ability which reading will give him. Far better to sell the acre of land, than do without the books. Several good books are announced in the Advertising columns, and in the list on page 226.

No. 106—Pocket Rifle.—(Breech Loading).—A full description of this beautiful implement, with illustrations, was given on page 32, of Jan. No. No one who enjoys shooting, or who has occasion to carry a light but effective weapon in traveling or while at work, will regret the trouble required to gather the 24 (or 18) subscribers required to secure this weapon free. If any one does not care for the mahogany case, we will present the weapon all complete, with extension breech and 100 cartridges, all packed in a strong pasteboard box, neatly prepared, on receipt of 18 subscribers for 1869 at \$1.50 each.

YOU WANT

- No. 3 Agricultural Annual, for 1869.
No. 2 Agricultural Annual, for 1868.
No. 1 Agricultural Annual, for 1867.
No. 3 Horticultural Annual, for 1869.
No. 2 Horticultural Annual, for 1868.
No. 1 Horticultural Annual, for 1867.

BEAUTIFUL—VALUABLE—CHEAP.

SENT POST-PAID FOR 50 CENTS EACH,

or

GIVEN AWAY,

(as noted below.)

Our Agricultural Annual No. 3, for 1869, and our Horticultural Annual No. 3, for 1869, are among the most valuable and beautiful volumes issued in this country during the present year. They are packed full of good information, and each volume contains a large number of beautiful engravings. They are worthy a place in every family, in City, Village, and Country.

They are universally admitted to be the cheapest volumes issued. They are original, the matter and engravings being all prepared exclusively for these volumes by a large number of first class practical writers. As these books are a permanent Annual Institution, we want everybody to have a copy, for all who get them this year will be sure to want the numbers for 1870 and thereafter. We therefore invite everybody who has not done so already, to send only 50 cents, and secure a post-paid copy of either the Agricultural Annual No. 3, or the Horticultural Annual No. 3, or send \$1 and get both of these volumes. They are entirely different.

But we will do even better, when desired, viz.: To

- any person sending during May or June
a subscriber to the American Agriculturist for 1869 at the regular price (\$1.50), we will present
a copy of any one of the above six Annuals
that may be desired, and we will send it
post-paid to any point in the United States
or Territories....A few minutes' work or
talking will enable any person to secure a
subscriber to the Agriculturist (as valuable
as we are now making the paper), and
then the Annual will be obtained free.

N.B.—One Annual is offered for each subscriber sent at \$1.50. The sender can choose any one of the six Annuals already issued, named above. One, two, three, four, or more subscribers will secure an equal number of Annuals, of any issue desired. (Two subscribers for six months count as one for a year.)...N. B.—These premium Annuals are special, and are not included in the general premiums, which are continued, as noted elsewhere.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for the month ending May 14, 1869, and for the corresponding month last year.

Table with multiple columns for Receipts, Sales, and Exports from New York, listing various commodities like Flour, Wheat, Corn, Rye, Barley, Oats, and their prices for different months and years.

CURRENT WHOLESALE PRICES.

Table listing current wholesale prices for various commodities such as Flour, Wheat, Corn, Rye, Barley, Oats, and other agricultural products, with prices for April 11 and May 14.

Gold advanced materially during the month under review, having been as high as 139 1/2, but it closes at 138. There has been a fairly active inquiry for most kinds of breadstuffs, which, however, have been offered freely, as a rule, at fluctuating prices. Export buyers have been purchasing common flour and Spring Wheat quite extensively, at the ruling figures. There has been a good home and speculative trade reported in Corn and Oats, but at irregular quotations. Flour, Wheat, Corn, and Rye, close with reviving firmness, on a pretty lively inquiry for desirable lots. Oats leave off heavily, in view of the large amounts coming forward by rail. Some contracts are being made to deliver No. 2 Spring Wheat within the next twenty days on the basis of \$1.44c. @ \$1.45c. per bushel, for export. Stocks have been reduced, holders having been quite willing sellers, nearly all the month. Provisions have been in very moderate request, but are closing steadily, on a somewhat better inquiry. Wool has been less sought after, and under accumulating supplies, prices have favored purchasers. Cotton has been moderately dealt in, closing bravely. Hous

and Seeds close tamely, at lower prices... The main inquiry for Tobacco has been for low grades, for shipment, at firm prices... Hay, Hemp, and Rice have been quiet.

New York Live Stock Markets.—

WEEK ENDING.	Beeres.	Cows.	Calves.	Sheep.	Swine.	Tot'l.
April 19th.....	6,651	69	1,573	21,783	14,230	44,300
do. 26th.....	6,022	77	2,243	13,956	20,546	42,870
May 3d.....	5,677	71	2,164	18,761	22,427	49,100
do. 10th.....	7,230	67	2,894	18,033	20,287	48,540
Total in 4 Weeks.....	25,592	271	8,874	73,683	77,490	184,819
do. for prev. 4 Weeks.....	23,333	339	4,033	83,591	60,470	173,512

Average per Week.....	Beeres.	Cows.	Calves.	Sheep.	Swine.
do. do. last Month.....	5,839	84	1,009	21,399	15,117
do. do. prev's Month.....	5,246	91	705	21,954	10,481
Average per Week, 1868.....	5,733	105	1,588	27,182	18,869
do. do. 1867.....	5,544	61	1,329	23,154	20,665
do. do. 1866.....	5,748	91	1,200	20,000	13,000
do. do. 1865.....	5,255	118	1,500	16,091	11,023
do. do. 1864.....	5,161	145	1,511	15,315	12,616
Total in 1868.....	28,193	5,469	82,571	1,419,479	978,061
Total in 1867.....	23,832	3,329	60,911	1,174,154	1,102,543
Total in 1866.....	28,880	4,885	62,120	1,040,000	672,000
Total in 1865.....	20,274	6,161	77,991	836,783	573,190
Total in 1864.....	267,609	7,603	78,621	782,463	660,277

The supply of beef cattle has been steadily increasing since the month opened. The weather has been dry and, for the season, cool, and trade steady. Almost every market day the desirable stock was disposed of by noon, and but few stall cattle remained over from day to day unsold. Prices varied somewhat on different days for the same quality of beef, and some drovers felt rather glum at the unsteady prices. Those who paid high prices at Buffalo and were obliged to drop 1/2c. per pound to make a sale, felt sore. The great supply of mutton and increased number of calves for sale always affects the trade in beef. Butchers complain of a dull fresh meat market. This is the "shad season" and eggs are plenty and cheap, and it is not to be wondered at that the consumption of meat is lessened. As we close our report, May 13th, trade is a little down, owing to the large supply on hand, and owners are in low spirits. The following list gives the range of prices, average price, and the figures at which the largest lots were sold:

Apr. 19 ranged 11 @ 17c. Av. 15 1/2c. Largest sales 14 @ 16c.
do. 26th do. 11 @ 17 1/2c. do. 14 1/2c. do. do. 14 @ 15 1/2c.
May, 3d do. 12 @ 17c. do. 15 1/2c. do. do. 14 1/2 @ 16c.
do. 10th do. 11 1/2 @ 16 1/2c. do. 14 1/2c. do. do. 14 @ 16c.

The average quality of the stock for the past month has been fair. Some weeks the range was wide, when Western still-fed cows and bulls were for sale. These last always sell slowly at the low prices given above. The fair to prime stock sold quickly at 16 1/2 @ 17c. per pound, net weight. There were none really fat or what might be called prime in market. The highest price paid was 17 1/2c. for good young steers, well fed and "juicy." Small lots of fair stock generally brought 16c., and seldom above that figure for the "bauch." Large sales, when all were included, dropped in some cases as low as 14 1/2 @ 15c. The market may be said to have improved in quality, with a decline in price of about 1c. per pound over prices paid last month.

Milk Cows.—The market is too full of poor cows, which sell slowly or not at all. Trade has been dull, but when a really good cow was offered it soon found a purchaser at from \$80 @ \$90; some few fancy cows have sold as high as \$110 @ \$125 each. Prices may be said to remain unchanged. Poor to medium cows were offered at \$45 @ \$60 each, and from this all the way up to \$90 were paid, the price depending upon age and milking quality.

Veal Calves.—The supply has been very abundant all the month and trade steady. Prices have declined somewhat, except for very fat veal. Very extra may be set down at 12c. per pound, but most of the high sales are at 11c. Prices are quotable at 9c. @ 11c. per pound. Mixed calves sell by the head for from \$10 @ \$11 each.

Sheep.—There has been a little falling off in arrivals for the last month; still, sales are slow. The supply of other meats being in excess of demand keeps mutton low in price, even for good sheep. Good, fat sheep sell for 8c. @ 8 1/2c. per pound; medium 7c. @ 7 1/2c.; while those light and small go for 6c. per pound.

Swine.—The arrivals have been numerous and trade fair all the month. Prices vary but little from those paid last month. Fewer dressed carcasses are coming in just now and the live hog trade is picking up a little. Dressed hogs sell for 12c. @ 12 1/2c. per pound. Live hogs are quoted at 9 1/2c. @ 10 1/2c. A few that were really extra fine sold as high as 10 1/2c., live weight.

Back Volumes Supplied.—The back volumes of the *Agriculturist* are very valuable. They contain information upon every topic connected with rural life, out-door and in-door, and the last ten volumes make up a very complete library. Each volume has a full index for ready reference to any desired topic. We have on hand, and print from electrotype plates as wanted, all the numbers and volumes for ten years past, beginning with 1857—that is, Vol. 16 to Vol. 27, inclusive. Any of these volumes sent complete (in numbers) at \$1.75 each, post-paid, (or \$1.50 if taken at the office). The volumes, neatly bound, are supplied for \$2 each, or \$2.50 if to be sent by mail. Any single numbers of the past ten years will be supplied, post-paid, for 15 cents each.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be prepaid at the Post-office where the paper is received.

How to Remit.—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of Orange Judd & Co.

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect Oct. 1, 1868, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the Registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money, and seal the letter in the presence of the postmaster, and take his receipt for it. Letters thus sent to us are at our risk.

The Pacific Railroad Completed.

—It is not within our province to record the ordinary news events of the day, but we cannot refrain from a word of congratulation at the completion of the great work which unites the States of the Pacific with those of the Atlantic. Aside from the great commercial advantages it brings with it, the effects upon the agriculture of the country will not be less marked. A large farming population will soon spring up along the route, with every advantage presented by a new country, while in ready communication with the great markets. The products of the fertile fields and teeming vineyards of California will find a new outlet, to the benefit of both East and West. More than this, long suspended social intercourse will be resumed, and those who have dreaded the heretofore long journey can now revisit the homes of their youth, and thus that acquaintance of the people of the widely separated parts of our country, which is so essential to our national peace and happiness, may be maintained.

Bound Copies of Volume XXVII

(1868) are now ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (16 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume, (50 cents extra if returned by mail.) Missing numbers supplied at 12c. each.

President Wilder Strawberry.—

"C. F.," Boston, sends a criticism upon the propriety of the above name. He holds that the title "President" should be kept distinctive for things and objects which have relation to the President of the U. S. We suppose that the committee of the Hort. Society who named this variety were aware that there was already a European variety called "Wilder," and it was necessary in coupling the name of the originator with the fruit, to use some distinguishing prefix.

About Engravings.—

Some journals, despairing of ever being able to equal our illustrations in accuracy and elegance, become very much exercised over them. The Country Gentleman finds that the picture of "Herons and their Nests" published in April last, was taken from a chromo-lithograph which appeared in London, and intimates that the artist palmed off an old picture upon us, as original. Our artists would not do such a thing if they could, and could not if they would. The picture was not taken from a chromo, and the name of the artist who painted the original is plainly and fairly given. The *Prairie Farmer*, which would never have made the discovery itself, takes up the cry of the Country Gentleman and rushes to print the statement that we have copied an English chromo, and tries to convey the impression that we have published the picture as original. If either of these papers knew anything about such matters they would see that we complied with everything that justice and courtesy require by giving the name of the artist. That this picture has been copied in colors and in wood engraving in London

we were well aware, and there is nothing about its appearance in our paper that shows any thought of presenting it as original. If we use a foreign picture as the basis of one for ourselves we are always careful to give the credit to the artist. "Copy-right secured" seems to trouble some people. "Father," said a boy who was hoeing corn, "the fish would bite first-rate to-day." "Yes, my son," said the father, "but if you attend to your business they won't bite you." The force of which remark "consists in its application."

Maple Sugar.—C. A. Simon, of Boardman, O., sent us a package of Maple Sugar which was very fine, some of it quite dry, and fit for any household use, and some in nice cakes, which was really delicious. Thanks, Simon. We wish a hundred times more of this good article were made yearly, as there might be, if proper attention were given to it. Some one else, from a great distance, sent us a box of maple, without thinking that the Express charges would be about a dollar a pound. It was sweet, though. We forget the name.

Seedling Grapes.—The Nauvoo, Illinois, Horticultural Club offers premiums for seedlings, as follows: \$100 for the best six pounds of grapes raised from the seed of *Vitis cordifolia*, or *V. astivalis*, and \$20 for the second best; \$50 for the best six pounds raised from the seed of *V. Labrusca*; and \$50 for the best raised from the seed of any variety to ripen not later than the Hartford Prolific. Premiums to be awarded in 1872.

Potatoes upon Sod.—A Canadian subscriber thus describes his practice in planting potatoes on sod. (Why not say under the sod?)—"We turn under the sod in spring, at planting time, with two plows on two separate lands, and the boys drop the cuttings six to nine inches apart in every third furrow, and going from one land to the other, the plowmen keeping account of their "thirds" as they come to them. When planted, it is well harrowed and rolled, and when the plants or weeds come up, it is well harrowed lengthways in dry weather, until the plants are over six or seven inches high, when it is lightly ridged up, and then afterwards leveled again, as the weeds grow until final ridging up."

Sundry Humbugs.—

Several months ago, when "One Dollar Stores" were just in the light of their activity, and while every thing, to all exterior appearances, seemed honestly conducted, we ventured to pronounce them ill-advised, impractical, and unsafe, and predicted the downfall which has come to most of them. There now exist but one or two of the "One Dollar Stores" out of the dozen or more that were in operation in New York a month ago. The high-sounding name of "New York Jewellers' Co-operative Union" started the largest store of this sort, and had for sale Oroide, brass jewelry, glass diamonds, ladies' and children's under-garments, flannels, etc. This concern flourished about six weeks, but one morning it was gone, and in the place of the gay decorations in the windows was the sign "Store to Let." We were in hopes the thing had, as the boys say, "died dead," but it had not, for now they are at the lottery dodge. In reality, this is their old trade, the "New York Jewelry Co-operative Union" being only a name to entrap people into buying tickets in a lottery. We warn people against the Association, and at the same time thank our Mayor for his timely letter, cautioning all strangers against such concerns. This letter was given last month, and should be copied by every honest newspaper in the country. Our Mayor's good work, however, does not end here. He has taken upon himself the business of shutting up several "Quack Doctor Shops," and he declares his determination to rid the city of these vile pests. The "New York Medical University" was the first to receive his attention. He found it to be a University only in name, and Doctor J. Walter Scott and Wm. Tripp were ordered to appear at the Mayor's office to answer to the charge of swindling. Their answer not being satisfactory, they were sentenced to the full penalty of the law. He has several others up under indictment for swindling. Photography, also, comes in for its share of notice by the city courts, and a "Spiritual Photographer" was called up on the charge of obtaining money under false pretenses. The photographer professed to take pictures upon which a likeness of some deceased relative or friend should appear with that of the sitter. The accused claimed that this was the work of the spirits, and though the contrary could not be proven, it was shown by experts that there were several ways in which the same thing could be done without troubling the spirits. ... Messrs. William Nicholson & Co., your "General Detective Collectors" may be all very well, but we shall not advise people to employ such means to have their bills collected. ... Good for the Androscoggin Herald, published at Mechanics Falls, Me.! We hope that the example of the *American Agriculturist* will soon tell

in other directions. The above named "Herald," being about to make a change in the paper, says: "But our ground feature is to be something widely different from any other paper published in the State of Maine, and, indeed, almost any other weekly in the United States. We are bound to undertake what no other daily or weekly and only a few of the monthly papers have had courage or principle enough to undertake. We shall, from the date that our sheet appears in its new dress, henceforth *publish nothing, neither in advertising or reading columns, that partakes, in any degree, of humbug or swindle.* No patent medicines, lotteries, one dollar sales, nor those worst of all swindles, private circulars to "females in poor health," and letters to indiscreet young men, will be advertised. In short, we shall advertise nothing from which the purchaser would not receive a fair equivalent for his money. On this principle, which we believe to be the only true and just one, we shall stake our success as a newspaper." Such a paper deserves success, and we hope it may meet with it. We commend its example to some very prosperous religious and agricultural papers. . . . Gumbidge, whom we have before shown up as one of the dealers in fac-similes of U. S. Treasury notes, is the subject of an amusing letter from U. S. Treasurer Spinner, at Washington, to Police Superintendent Kennedy, of New York. Gumbidge proposes to send fac-similes of currency, and some fools, or scoundrels, infer from his circular that he counterfeits notes which can be passed. They send money to Gumbidge, who returns reduced photographic copies of the notes. We are at loss to say which is the more culpable of the parties in the transaction. Gumbidge gets money under false pretenses, by promising fac-similes of the notes, and sends copies differing in size, while those desiring to obtain possession of them evidently have the intention of making money dishonestly by the operation.

Poultry Houses.—"W. H." likes the "Poultry House at Ogden Farm," and asks: 1. "Is the 5-foot wall as good made 8 or 9 feet high? 2. Why is the sash sloping instead of perpendicular? 3. Would not a framing with tight outside and inside boarding, with hay, or tan, or sawdust be as warm as the stone-wall and dryer? 4. Would not air-space be just as good for all purposes, omitting the filling in? 5. If, instead of fifty fowls, accommodations are wanted for six times that number, will the expense of the structure, divided in six parts, cost over four times that of the Ogden?"—*Answers.*—1. The wall was already in place, and not built for the purpose. It is high enough, and better for cold weather than if higher. 2. A sloping sash admits more sun than a perpendicular one. 3. Yes, in winter, but in summer it might be damp and mouldy, and would harbor vermin. 4. No. It would be almost impossible to make it tight enough to prevent a circulation of the air. 5. The cost would be less, in proportion to the number of fowls, for the larger house—probably not so much as one-third less. It would be better for the fowls to be in small buildings, at a moderate distance from each other, than to be in different apartments under the same roof.

Lamp Wicks.—Mrs. S. A. Philip writes a word to Aunt Hattie.—"You say you have known it to be necessary to harness the horse and drive to town for lamp wicks. We live in the backwoods, twelve miles from a store, and husband never can remember such a trifle, he thinks, as lamp wicks; so I have given up asking him to get any. Several years ago I saw in some paper how to make them. Take a strip of Canton flannel three times the width of a wick, double it, so it will be three thicknesses, the smooth side out, and sew the raw edge and the doubled edge together over and over. Do not get it too large, and it will burn as well as the best sale wick. Every one generally has scraps of Canton flannel in the house, so that all a wick will cost will be about five minutes' work."

Leaky Teats in Cows.—"J. C.," Columbus, Ohio, writes: "I have a valuable cow that loses her milk; at times it runs from her in streams. Will you give me a remedy?"—*Ans.*—Milk three times a day, say at five in the morning, at noon, and at eight in the evening. If this does not stop it, have a little colloidion, (which is gun cotton dissolved in ether) to be had of all druggists or photographers, and put a drop upon the end of each teat after milking, being careful not to touch it to a sore spot, or the cow will kick. The hole need not be covered except in extreme cases, for a little ring of colloidion will shrink in drying and draw the hole together.

Poke-weed Again.—A Richmond correspondent of the London Field states that the Poke-weed, Poke-berry, or Pigeon-berry, is never used in Virginia as food, and the Field asks for information. If the Virginians do not use it, so much the worse for them; the only difficulty we ever found with the young shoots

was our inability to get all we desired. De Voc, in his Market Assistant, puts them down among the vegetables to be found in the markets of our large cities.

The Naomi Raspberry.—We have read all that has been published upon this variety, and conclude with Betsy Prigg that "there ain't no such pussion." The best that can be said about the Naomi, if any one has the Naomi, out of the many so called, is, that it is so near like the Franconia that no one can tell the difference, but it is suspected of being a little hardier.

The St. Petersburg Horticultural Congress.—The only American that we have thus far heard of, as being invited to serve on the committees of this International Exhibition, is Dr. Charles Siedhoff, North Hoboken, N. J., well known as the "Horticola" of various journals. We regret that Dr. S. declined, as he would have creditably represented American horticulture at this most important exhibition.

Lice on Honeysuckles.—Mrs. J. B. Doe writes that she has successfully used wood ashes sifted over the vines just before a shower.

Draining a Garden.—"F. H." If we understand the shape of your garden we should advise four drains the whole length of it. In very stiff soils, where thorough drainage is needed, the tiles are sometimes put still nearer.

Cut-Worms.—Mrs. "M. L. H.," Peoria, Ill., says: "Tomato, cabbage, sweet potato, and all similar plants, can be protected from cut-worms by a little strip of paper around their stems, extending from near the roots to about an inch above the surface of the ground. The trouble is comparatively small."—This is not new, but we give it again, as it may be useful to some. It will do very well in small gardens, but where one plants cabbages, etc., by the acre, it would be impracticable.

The Native Countries of Plants.—Mrs. Harriet Beecher Stowe writes from Florida: "Sweet potatoes, sugar cane, rice, cotton, melons, and cucumbers, all of which are the native growth of the soil."—This will be news to those who have given attention to such matters. De Candolle, who is the highest authority on geographical botany, does not assign either of these plants to North America.

Scale Louse from N. C.—J. G. Frowey sends us a portion of a branch very badly infested with some kind of Coccus, but does not say what tree it is from. The bark is very much disfigured, and we can only guess that it is that of an orange tree. Persons who send us insects should always give the name of the plant upon which they are found.

Price of Potatoes.—By an oversight in dropping two lines of type from the advertisement of Messrs. L. D. Scott & Co., in the April number, they were made to offer Broese's Prolific at far less than cost. The correct reading is in their advertisement in the March number, page 111. Those ordering from this firm will please make a note of the fact.

Beet Sugar.—Mrs. S. A. Philip.—The process for extracting sugar from beets requires too much machinery to allow it to be followed in the family.

More Grubs with Fungi.—After page 220 was made up we received from T. H. Winder, Johnson Co., Kansas, specimens of grubs similar to those there described. Mr. W. says that he has seen the parasitic plant four inches long. He wishes to know "what they are and what they will be." We have told on the page above cited all that we know as to what they are, and hope that Mr. W. will carefully observe them and assist us in finding out what they will be.

Best Roots for Milch Cows.—"G. W. A.," Lawrence Co., Ind. Sugar Beets are probably the best roots you can raise for cows. The season is usually a little too far advanced by the first of June for them to do very well, and we advise you to raise also Swedish turnips (*ruta-bagas*) and cabbages, which will make full crops with proper care. See Hints about work.

The "Meshamock" Potato.—"C. L.," Sanpete Co., Utah. The Meshamock is known at the East as the Mercer and Chenango. It is a most excellent variety, which of late years has proved very unproductive and liable to disease. Those sent, the finest we have seen for years, are planted and we will report results.

Fishing in American Waters. By Genlo C. Scott. New York: Harper & Brothers. We

have not had time to examine this handsome volume. Its author has long been known as a leading writer on angling matters, and if the instructions he gives are in keeping with the beautiful manner in which they are presented, they will be of great value to sportsmen.

North-Western Hedge Plant Growers' Association.—A meeting will be held at Mendota, Ill., on the 23d of the present month. A full attendance of plant growers and an interesting time are expected. H. N. Pease, Bloomington, Ill., is the Secretary. Any one engaged in growing hedge plants may become a member by the payment of one dollar.

Plums.—"C. Porter," Lehigh Co., Pa., finds his plums set every year, but that they all drop when half grown. Probably C. P. does not know the curculio by sight. Let him spread a sheet under the tree as soon as the plums are fairly set, and give the tree a sudden jar. He will soon discover the cause of his trouble in the shape of a small beetle. If he expects to have plums, he must do this every morning.

Refuse Glue.—"J. H.," Wheeling, Va., asks, "What value is there in the refuse of glue manufacturing as a fertilizer?"—*Ans.*—Nitrogen, if it contain any glue or animal matters. If it is soluble, dissolve it, and add it to your compost heaps.

Trailing Arbutus.—"J. W. R.," Bethlehem, Pa. The Trailing Arbutus, or May-flower, *Epigaea repens*, can be transplanted if its natural requirements are observed. It needs shade and a covering of leaves in winter. The best way is, to take up a large tuft, and place it in a situation as near as possible like that from which it was removed.

Potato Queries.—"Norwood," N. C. It is difficult to say what potato is best for a late crop. The old varieties are very uncertain, while the new ones are not well established. The Harrison is a great cropper, sometimes good and again poor in quality. Gleason has done well, both in quality and quantity, in some places at the North. Rolling in plaster after cutting is good practice, or the sets may be exposed to the air to dry after cutting.

Worms on Vines.—"W. H.," Newark, N. J. We cannot say from the description which one of the many insect enemies of the grape vine troubles you. Vines, if trained so low as to have all parts within reach, can be daily visited, and all "worms" kept in subjection by hand-picking. With large, rambling vines the case is difficult. Did we know which insect it was we might suggest a remedy.

"Best's Improved Fruit Tree and Vine Insect Destroyer and Invigorator."—So many have written us about this, that we advertise it by giving the full title. Circulars without number have been sent to us, and people who have invested five dollars for the recipe send it to us, and ask if it is safe to use it. As the article is patented, the recipe is no longer a secret. We copy one from Bedford Co., Pa., which is the same as many others that have been sent to us: "One gallon Whale Oil, one quart of Pine Tar, one quart Coal Tar, two pounds Potash, two pounds Carbonate of Ammonia, to forty gallons of water. Mix the oil and the tar well before adding the other ingredients. Put the ingredients into a barrel, take cotton wool or straw, loose, three inches thick, then bind it around the tree, one foot above the surface. Every other morning, for ten days, early before the sun gives much heat, with a watering pot wet the wool or cotton (how about the straw?) with the above preparation. This must be done in the spring, when the frost has left the earth, and the trees commence budding. It is very important that this should be strictly observed. When the trees are much decayed, this preparation should be used in the fall of the year."—Our correspondent states that the foregoing is a copy of the deed, allowing him to use it. The following are extracts from a pamphlet furnished by Mr. Best: "For wheat, let it dry; this will cause the grain to come up with strength, so the frosts of winter will not kill it, whether covered by snow or not; it will grow stronger, head heavier, and no weevil or fly will touch it, and dew or rain will not cause it to rust. The reason of this is, that the mineral substances of the invigorator connect with the mineral substances of the earth, and nitrogen and hydrogen form a power of life in the seed; a greater amount of this power, starting with the first growth, connects with the oxygen in the air, and swells the tree or stalk, as a greater amount of sap forms through the pores of the stalk, and the branches receive more, and being filled with the substances from the earth, receive a greater amount of carbon from the sun; it forms a greater heat, and produces a more vigorous bud on fruit trees, and rust will not gather on the head,

so the hardest frost will not affect the bird or head." We must apologize to our readers for publishing this farrago, but it is the best way to show up the absurdity of the thing. Much more nonsense might be quoted from Best's circular, now before us. A concern in Baltimore puts out a similar compound, which contains the same ingredients, but in different proportions. The case is just here. We have no doubt that a solution containing a considerable amount of potash and carbonate of ammonia, (an expensive article) if applied to fruit trees, or plants in general, will prove a serviceable manure, and that trees so treated will produce much better results than if altogether neglected, but no better than if given a generous supply of barn-yard manure every year. The whole secret lies in inducing people to do something with their trees. This patent application acts upon the same principle with all the "hair renovators," the directions for which read, "apply the liquid, and brush it in for half an hour." If people could be induced to use the brush for half an hour without the "renovator," the same result would be obtained. We are at loss to conceive how any one can read the circulars relating to these "Tree Invigorators" without seeing the ignorance and stupidity they display, and the preposterousness of their claims. The Ohio circular says: "When applied to the tree it penetrates every pore, destroying the worm in the heart, and by connecting with the mineral substances of the earth, destroys the cause and prevents the creation of any destructive insect," and so on, and so on. The Baltimore pamphlet says: "As an insect destroyer, applied to the tree or plant, it aims, by subtle action through the pores, (what pores?) to reach the worm (what worm?) wherever it has penetrated, while it will also combine with the mineral elements of the soil, to destroy the producing germ (what is that?) and prevent the creation of the hostile insect." It seems to us that this is a dangerous thing that proposes to interfere with "creation." Now, if any one wishes to invest \$5 in the Maryland or the Ohio recipe, let him do it, but we ask everybody to please stop writing us about the "Tree Invigorator." Our time and space are too valuable to be devoted to such absurdities. We have "said our say."

"Muck"—"What is Muck?"—This question comes to us almost every month in the year, and now and then we answer it, as we would be glad to do twelve times in a year if that were necessary. "Muck is money," says an English proverb. Muck is manure in English parlance, and covers pretty much every thing that is soft or moist and pasty. We apply the word almost exclusively in our agricultural technology to the partly decayed vegetable matter of swamps and peat mosses—even applying it to peat fit for fuel, if it be used as manure or as an absorbent in cattle stalls. After getting it out, let it freeze and thaw, or if on drying it is not very hard and lumpy, compost it with lime and it will become fine and crumbly. It is often rich in ammonia and always useful in composts.

Chip Manure.—A subscriber says he has a quantity of chip manure on a small farm and would like to know if it is good as a top-dressing for wet land. [Not very]. "Is it valuable for composting with other fertilizers?" [Yes]. "Is it good for dry land, plowed or harrowed in?" [Yes, both]. In short, well-rotted chip manure is very good for almost any soil and for all crops, if there are not too many wire worms in it. To kill these, compost it or mix well with lime and salt, or lime slaked with brine.

Liquid Manure.—"C. M. F.," Boone Co., Iowa. The excrement of sheep or other animals may be used in the liquid form. Put up a barrel as for a leach and draw off the strong liquid from the bottom; dilute this to the color of ordinary tea, and apply it to plants only when they are in a growing state. If used when the plants are checked by drought it will prove injurious. On the small scale there is no better way than to apply it from the spout of a watering pot. It will be better to draw away the earth from around the roots of the plants, apply the liquid manure, and when this has soaked away, replace the earth. It need not be applied oftener than twice a week.

Weight of Rouen and Aylesbury Ducks.—As mentioned on page 209, these ducks, if pure and well bred, are very much heavier than common ones. Good-sized common ducks weigh from 6 to 8 lbs. per pair. Aylesburys which would weigh less than 10 lbs. would be below par, while Rouens ought to exceed this weight by 3 lbs. at least to be considered fair birds. Such are, however, only "fair." Choice breeding stock, when fat in the autumn, ought to bring down 16 lbs. at least; and American breeders ought not to be satisfied until they can compete with the English, and produce birds of both breeds which will weigh 18 lbs. to the pair. We believe that at the last Birmingham show, the prize Rouens weighed 19½ lbs., and the Aylesburys were

nearly up with them. In 1866, at Birmingham, the three prize trios of Rouens weighed respectively, 19, 18½, and 17½ lbs., and the best trio of Aylesburys, 18 lbs.

Texas Fever.—Dairy Stock for Illinois.—W. J. Jenkins, Champaign Co., Ill., asks: 1. "Is there any danger in pasturing cows on land where cattle have died of the Texas fever last year? 2. Is there any remedy, should there be any attacked with the fever? 3. Also, what breed of cows would be best adapted to this locality for a butter dairy? 4. Will cheese pay better at 25, than butter at from 35 to 40 cents per pound? 1. We suppose there is no danger at all. 2. So far as known, there is no cure, though medical treatment has, it is claimed, cured some cases. 3. With our present knowledge, we would recommend the Ayrshires, as being likely to produce, with good-sized Western cows, a superior class of cows for cheese making. 4. Cheese would pay better than butter at the prices named.

A Drooling Cow.—Horses are apt to drool or salter when fed on certain kinds of fodder, but cows are not affected by such feed, and drooling is, in our experience, a rare thing with cows. "J. S. G." has a drooling heifer, which is fed and treated like other cows which do not drool. We would try sponging her mouth out three or four times a day with oak-bark tea, or dilute alum water, (the former being probably preferable,) letting her swallow some of the decoction. In case it should produce constipation, the second or third day give a pound of epsom salts, and an ounce of powdered ginger. If tried, please report the result.

Trichina.—A correspondent writes that he is informed that pork must be boiled in order to kill the Trichina, should it be present, and that frying will not answer. There can be no danger from the parasites if the pork is thoroughly heated through, so that all parts shall be brought to about the temperature of boiling water, and it makes no difference whether this is accomplished by boiling, frying, broiling, or roasting. The pork must be well done, and done entirely through. . . . Raw ham is daily exposed for sale in the city restaurants, as is raw sausage. Why do not the Board of Health stop it? . . . The appearance of an illustrated article on Trichina in one of the pictorial Weeklies reminds us that the first popular account ever given of this parasite appeared in the *American Agriculturist* in April, 1866.

Gravel-wall, or Concrete Houses.—Moses Hadley, Ind. You will find in the February, March, and June numbers of the *American Agriculturist* for 1865, full directions and numerous hints and suggestions in regard to making gravel-wall buildings. We know of no late treatise on the subject that has not a big axe to grind in the shape of some patent. This material, if good ingredients are used, is very cheap, durable, and strong, and there is no trouble about securing a handsome rough finish. Smooth sticks, three inches in diameter, placed in the lower course, twelve to eighteen inches apart, and drawn up as the wall rises, make a series of tubes, which prevent dampness striking through, and enable one to plaster on the inside without furring off from the outer wall.

Trial of Mowers and Hay-making Tools.—The New England Agricultural Society announces a trial of Mowing Machines and other haying tools, to take place at the Agricultural College farm, Amherst, on the 23d to 25th of June. All entries must be made before Saturday, June 19th, at the office of the Secretary of the Society, Col. Daniel Needham, Boston. Entrance fees as follows: Mowers, \$50; Tedders, \$25; Horse-forks, \$20; Horse-rakes, \$20.

Logging.—G. A. Porterfield, of Jefferson Co., W. Va., wants to know how to get logs out of a stream by which he can float them down to his farm. The banks are not high. It would not pay to have a regular "way" built, unless there were to be great use for it; but any ordinary logs could be rolled out thus: fix two timbers extending from the bank into the water at some distance from the shore, get the log parallel to the shore and resting against these skids; pass two ropes, each attached to the upper end of one of the skids, under the log and back to the shore. A pair of horses attached to each rope will roll out a heavy log. One pair made fast to both ropes would probably roll out common 16-foot logs. The ropes may be attached to a set of blocks, or to a windlass, and thus power enough be applied by a single horse or by hand even.

Agricultural Colleges.—J. T. Huger, Tyler Co., West Va. You will find statistics in regard to the various Agricultural Colleges in our *Agricultural Annual* for 1869. The Michigan College is the oldest, and is now in successful operation. Some Michigan people

oppose it in the hope of serving certain ends of their own, but it still has a moderate support from the legislature. The Massachusetts College has been in operation only a short time, but it is already a success. The Pennsylvania College has been reconstructed so many times that it cannot be considered as being established with a permanent policy. The Illinois Industrial College is still in the embryo state. If the Cornell University at Ithaca, New York, has made any provision for agricultural education it has not informed us of it. Other schools, especially in the Western States, are in a more or less advanced state.

Agricultural Papers a Power.—Very few who do not read the correspondence of the agricultural papers have any idea of the hold they have upon the people. We do not often publish the commendations which come to us individually, but here is one which is so general that we give it as a specimen of hundreds. "C. C. D.," Minnesota, says: "I take four different papers, but we can hardly wait from one month to the next for our papers to come." "C. C. D." will find his questions about Rouen Ducks answered elsewhere in the present issue.

Asparagus.—"G. E. S.," Middletown, O. There is no reason why an asparagus bed cannot be made as well in autumn as in spring. All hardy herbaceous plants, of which asparagus is one, do better if transplanted in the fall than in the spring. The making of asparagus beds in spring is laid down in the books, and it seems very difficult to get people to take a common-sense view of the matter. Any thoroughly hardy plant may be set without detriment whenever it is at rest and the soil is ready.

Nutmegs in California.—The N. Y. Tribune has the following: "The nutmeg tree is indigenous to California. There is not a large number of the trees in the State, but nutmegs were gathered and sold in Placer county many years ago." The vitality of an error like the above is astonishing. The same statement appears every now and then in some paper, and now it is the Tribune's turn to keep it alive. There is in California an evergreen tree, related to the Yews, which from the shape of its nut is called the California Nutmeg Tree. It is no more a nutmeg than a Horse-chestnut is a Chestnut. The botanical name of the tree is *Torreya Californica*, the genus being named in honor of Professor John Torrey. There is a *Torreya* in Florida, a third in Japan, and possibly a fourth in China. The true nutmeg is as widely separated from the *Torreya* as a peach is from a pine tree. The resemblance of the fruit of the *Torreya* to the nutmeg ceases with its shape. As to flavor, the wooden nutmegs of Connecticut would be preferable.

Missisquoi Water and Powders.—Several have written us about them. A chemist of reputation and employed in a responsible position under the U. S. Government informs us that the Missisquoi water contains a smaller amount of mineral constituents than ordinary well water, and that he considers it a very pure and harmless water. We have no knowledge of what the advertised "Missisquoi powders" are, but if they really represent the Missisquoi spring our advice is to stick to the well or pump.

Wheat after Oats.—H. M. Tappan, Fulton Co., O., writes: "I have about ten acres, plowed up two years ago, it being a heavy sod. It has been planted to corn two years in succession, and is now in oats. Will it pay me to sow it to wheat next fall? The land is very rich, and is partly sand, and some clayish loam."—*Ans.*—It will probably pay to sow wheat on very rich land. If too much richness is not taken out of it, your wheat will do well. Of this you must judge. It is a very bad rotation, ordinarily, to let wheat follow oats. Put on three hundred pounds of Peruvian guano, and the wheat will probably do well enough.

Sweet Corn.—The lady who sent the sample of dried sweet corn is informed that it was remarkably fine. The owner of the patent dryer in which it was prepared should advertise it.

Sensible.—"G. H. S.," Beaver Dam, Wis., believes in obtaining the experience of others through agricultural books and papers. He says: "I have a strong conviction that there is no occupation in this western country in which systematic labor and persistent brain work are more needed than in farming. I am also just as thoroughly convinced, that if the business men of our country were to transact their business with as little system and head work as do most of the farmers, not one in ten could sustain himself for fifteen months."—Mr. S., we shall be glad of your experience, and the fact that you are unaccustomed to writing is no obstacle.

To Kill Briers.—"J. N. B.," of Rockingham Co., Virginia, has a great many "running briers" on his farm, and wants to know how to destroy them. If the land is under the plow, thorough cultivation will kill them. If not, we should mow them down with a brush scythe, and then pasture the field heavily with sheep as soon as they are sheared, so that the briers would not tear off the wool. The sheep would eat the leaves and weaken the plants, and ultimately kill them.

Land and Fresh Water Shells of North America.—The Smithsonian Institute is doing an excellent work in publishing in its Miscellaneous Collections treatises that it would be difficult to produce otherwise. This monograph of our land shells, so much needed by those who study shells, and calculated to aid the worker in this branch of natural history, would with difficulty find a publisher, as the demand for such works would not make it pay. It does, however, pay to have such works as this; they are useful not only here but abroad, and we are glad that the Smithsonian takes this method to "diffuse knowledge among men." It is to be regretted that the book does not inform us how it may be obtained. The illustrations are numerous, and the whole gives indication of honest and thorough work.

Gas-house Lime, and the Ammoniacal Liquor of Gas-works.—These substances form a valuable source of manure, of which, thus far, but little use has been made. The ammoniacal liquor is very strong, and should be filtered through dry earth, or used to saturate earthy compost heaps, and even then had better be employed with some caution. Applied in its raw state, it is very likely to kill all vegetation. The refuse lime from gas-works consists largely of compounds of sulphur and lime, all or most of which are injurious to vegetation; but if composted for a few months with refuse matter, such as chips, sods, leaves, weeds, or other porous rubbish, the chemical changes which take place reduce it gradually to the condition for the most part of lime, and sulphate of lime, or plaster, both of which are beneficial; this refuse, so treated, would have a greater agricultural value than would freshly burned lime.

Books.—Those who write us to know if there is any book on this or that subject should first look over the Book List, which usually is to be found in the advertising columns. We intend to keep every work relating to agriculture, horticulture, etc., whether published by us or not, provided it is a good and useful one. There are some works—generally neither good nor useful—that are sold by subscription. Farmers as a general thing would do well to be shy of agricultural book canvassers. A few good books are sold in this way, but the majority of such are trashy, and could never be sold if their sale depended upon their own merits, and not upon the representations of glib-tongued peddlers. The safest way is to order of the nearest bookseller, or by mail of the publishers, whoever they may be. There are some departments of agricultural and horticultural literature in which there are no good books, and these are being rapidly filled by the publishers of this journal and others. No one should undertake a special culture or branch of farming of any kind without first becoming familiar with the literature of the subject. Some one has happily remarked that experience is none the less valuable for being printed. But the prejudices against book farming are rapidly passing away.

Cultivation of Potatoes in N. C.—"S.," of Salem, writes: "With us a good clay, not too heavy, yields better potatoes than a sandy loam. If too rich, we get tremendous vines but a poor yield. Are these facts at variance with Northern experience? If so, is the climate the only cause?"—It is probably the only reason why clays are better than sandy or gravelly loams. The former hold moisture better. The kind of manure makes much more difference than the mere richness of the soil. Rank fresh manure makes vines, but well-rotted manure, especially if it has been composted and well worked over, may be freely applied to the benefit of the crop. The same must be true at the South, we think.

Superphosphate vs. Peruvian Guano.—"J. L. C.," Saratoga Springs, writes: "My farm comprises a variety of soils, such as sand and gravel, together with clay and alluvial low land; and I wish to try some of the commercial fertilizers. What is the relative value of Baugh's superphosphate and Peruvian guano? In this vicinity, the former has been used with satisfactory results, but very little guano has been tried. We depend mostly on gypsum."—We have used several tons of Baugh's superphosphate, and find it an excellent fertilizer for turnips, tomatoes, cabbage, strawberries, lettuce, cucumbers, melons, and garden crops generally. In an old garden, that has been liberally manured for many years, it has a magical effect. But on

corn, on the writer's farm in Western New York, it has not been found profitable. And the same is true of Peruvian guano. Gypsum is our cheapest manure for corn. For potatoes, guano is better than superphosphate. On the lighter and poorer soils of the Atlantic slope, superphosphate may prove profitable for corn and other farm crops. On a farm having light gravelly upland, with clay and alluvial low land, our aim should be to develop the resources of the low land, and use the crops obtained from them to make manure for the upland. With this barn-yard manure, with artificial manures as an auxiliary, the fertility of the land may be maintained, and increased.

Plowing Heavy Land.—"G. C.," Stannton, Va., writes that he has been trying to plow a meadow of about thirteen acres, which has not been plowed in fifteen or twenty years, and has been most of the time covered with water. "I ditched it, and it is now apparently dry, but four horses are unable to pull a No. 5 Livingston plow through it on account of the toughness of the sod, and the stiff character of the soil. Can you or your 'Walks and Talks' give me any suggestions?"—We presume the draining has been accomplished by surface drains, and is still quite imperfect. Instead of plowing, it might be better to harrow the sod thoroughly, and sow grass seeds on it. If the toughness of the sod is owing to the ground being full of quack, and it is decided to plow it, we would put on a three-horse steel plow, with a sharp coulter, and not attempt to go any deeper than the three horses can draw with the ease of ordinary plowing. "W. and T.," had a heavy clay field that had not been plowed for a dozen or more years, into which he could not get the plow more than three inches. He scratched it over with the plow the best way he could, sometimes going in for a yard or two four or five inches deep, and sometimes not more than two inches, and sometimes not that. It was wretched work. But during the summer, the sod rotted more or less, and being occasionally harrowed, it acted as a mulch, and kept the soil underneath moist, and in the course of a few months it was plowed again, deeper and better, and sown to wheat. This was a mistake. It should have been "fall-fallowed." After the fall rains it might have been plowed a reasonable depth, and after a winter's exposure, would have been in fair condition for a crop of oats. Should we have such a case again, especially if there was quack grass in the land, we would fallow it for eighteen months, and then seed it down with timothy in August or September without any grain sown with it. On heavy clay land, an eighteen months' fallow, if the work is thoroughly done, would develop a large amount of plant-food, and there is no danger of its leaching out. Such treatment ought to make a splendid meadow.

Potatoes Manured with Leaves. Much on the principle of raising potatoes under straw. "S.," of Salem, N. C., says that one of the best potato growers in North Carolina practices covering the potatoes with 8 to 12 inches of leaves. He raises the same crop year after year, and makes no other return to the soil, yet has noticed no falling off. Others put on the leaves after the first plowing, when the plants are well up.

"On a Run-down Farm, and no Manure, will leaf mould help me any?"—"D. S. II.," Ossipee, N. H.—Yes. Get all you can, and compost it, if only for a week, with lime, using a bushel of slaked lime to a cart-load of mould, or mix it with fresh manure of any sort—one-third manure to two-thirds mould. It will heat enough to be of great service in ten days. If there is absolutely no time to wait, apply the mould to the land, and lime it well at the same time.

Raising Poultry for Market.—"E. F. V.," Arch St., asks: "Where can I find some one that is engaged in raising poultry for the market? I intend going into the business."—Poultry-raising is a branch of business usually followed on the farm, and you can hardly go amiss of good poultry men in any farming district. It is seldom followed as a distinct business, and whenever attempted has generally failed, mainly, we think, through too close crowding. A thousand hens, turkeys, ducks and geese ought to have at least twenty acres of land, partly covered with wood and brush. Ducks, geese, and turkeys are very extensively raised about Narragansett Bay, in R. I., and it would pay a man who wishes to raise water fowl to visit Tiverton and Little Compton in that State to learn how it is done.

How Much Lime to the Acre?—"H. G. L.," of Maryland, writes: "We find by analysis that lime is required only in a very limited degree; and I am inclined to think the excessive use of lime in some sections of the country a waste of time, money, and labor, and also that the liberal use of superphosphate of lime, potash, ammonia, and gypsum, would make nearly if not quite unnecessary the use of lime."—The value

of quicklime as a manure is not merely in supplying an actual constituent of the plant. If it was, a few pounds per acre would be sufficient. Its value consists in changing the chemical and physical character of the soil—in developing the latent mineral plant-food, and in decomposing and rendering available organic matter, and in forming compounds which attract ammonia from the atmosphere. It may be that we can purchase this ammonia and other plant-food cheaper than we can get it by using lime. It depends a good deal on the nature and composition of the soil. At present, this question cannot be definitely settled, except by actual trial on the farm. In England, where lime was formerly used in large quantities, the tendency for some time has been towards a more liberal and direct use of ammonia and phosphates in manures, rather than to develop them out of the soil by the use of lime. A judicious combination of the two systems will probably be found the most profitable.

How Does Water Get into Draining Tiles?—Many correspondents ask this question, and it seems to strike every one as the first mystery of tile draining. The answer is a very short one. *It leaks in.* The soil outside of the pipe is saturated with water, which is pressing downward, seeking an outlet. The open joint between the ends of two draining tiles is a crack through which it can find its way. Once inside the tiles, it runs off and leaves room for more to follow.

N. Y. State Fair.—The next Fair of the N. Y. State Agricultural Society will be held at Elmira. The officers announce that "The books of entry for premiums will be closed three weeks before the opening of the Fair." This means we do not doubt exactly what it says, and it is important that all intending to exhibit should remember it. Entries may be made up to that time by letter or personally, at the rooms of the Society, Albany. Corresponding Secretary, Thos. L. Harrison.

Hallett's Pedigree Wheat.—A gentleman at Wilkesbarre, Pa., asks what became of the wheat distributed from the *Agriculturist* office in 1861? It does not seem to have proved as valuable as we expected. The truth is, that few farmers have the time or taste to experiment with a small package of wheat. It is generally sown in the garden, and the birds eat it, or it gets hoed up, or accidents of one kind or other befall it. But there are also other reasons why Hallett's Pedigree Wheat has not proved more useful. It is a variety that has been carefully "bred" until it is adapted to produce a very large crop on very rich land. If it is true that our wheat crops are deteriorating, the trouble is not so much in the want of better varieties as in the want of better tillage and manuring. There are good farmers who have, by underdraining and good management, brought their land to a high state of fertility, and on such farms improved varieties of grain are needed. But such men have more faith in good culture and manure than in new varieties of seed, while those who are disposed to try improved varieties of seed are frequently indisposed to use the means necessary to improve and enrich their land, without which such varieties are useless. What we should aim at is to induce good farmers to secure good varieties of seed, and poor farmers to devote all their energies first to enrich the land, and not waste them in searching for a variety of grain that will produce a large crop of superior quality on poor land unregenerated. There is no such variety, and there never will be!

A New Rotation of Crops Wanted in Maryland.—"M. J. H.," Cecil Co., Md., writes: "I have one hundred and fifty acres of light clay loam,—five fields, of fifteen acres each, and the balance in pasture. My rotation has been corn, oats, wheat. Yield, sixty bushels corn per acre, oats, thirty bushels, and wheat, twenty bushels. But I wish to give up the oats, as the soil is of such a nature that they will not stand until ripe. What crop shall I substitute? Would oats, sown as we now sow them, on the corn stubble, and plowed under for wheat, be a good fertilizer, or would peas answer better?"—The peas would be the better crop, turned under when in blossom, say in June or July, and the surface afterwards kept clean and mellow until the wheat is sown. But why not try red clover, sown in August among the corn? If it does well, it would be just what you want to plow under for wheat, and if not, there would still be time to sow peas or oats in the spring. But we do not like either plan. With good land, good markets, and easy access to fertilizers, it is poor economy to plow under a crop of oats, peas, or clover, for manure. We would try to keep more stock. Why would it not do to plant beans instead of the oats after corn? They would allow the use of the horse-hoe, and they are off in good season for sowing wheat afterwards. The money obtained for them, expended in manures, would enrich the land far more than turning under a crop of oats, peas, or clover.

More Percheron Horses.—It is always gratifying to have an opportunity to examine fine imported stock when it arrives, and the more so when the importations are made in consequence of the interest in any class of stock excited by the *Agriculturist*. Two of our subscribers have just imported some fine Percheron stallions. John J. Parker, of Westchester, Pa., secured the services of a friend to select for him as fine a horse as he could find. He is entirely satisfied with the purchase—a five-year-old, dapple gray, over 17 hands high, weighing 1,650 pounds, and gentle as a kitten, named "Prince Imperial." E. W. Shippen, a farmer, of Meadville, Pa., was so much interested in Percherons, that he went to France, traveled through the Perche country, and attended the great fair at Bornay, where he bought three noble horses. One, a light bay, named "Barcourt," took the first prize at the fair; the other two are dappled grays,—one of them the winner of the third prize at the same fair. They are all young, all gentle and kind, and all used to hard work, as shown by the old harness marks. There is a great demand for large horses, for carriage and express use, and heavy teaming in the great cities, and this demand will continue or increase. At the same time, the speed, toughness, endurance, and style of the Percherons are of more value than weight simply.

Prolapsus Uteri, in Cows.—"Falling of the withers" is the term by which that protrusion of the internal organs of animals which sometimes follows parturition is known among farmers. It is a very dangerous thing, and in most cases, so far as we can learn, terminates fatally under the common modes of treatment which suggest themselves to farmers. Having quite a file of letters asking about it, and telling almost uniformly of the death of the cows, we consulted Dr. Liantard of the New York College of Vet'y Surgeons, and his instructions are to proceed as follows: First wash the parts with great care and the utmost delicacy of touch, using blood warm water (100° F.) and a soft sponge; when perfectly clean replace the protruding organ, passing it back gradually until all is returned and pushed well within. Then provide a narrow stall where the cow will be obliged to stand or lie with her head lower than her hind quarters. Watch her carefully and if the *prolapsus* recurs, repeat the operation, not neglecting washing with tepid water as described. Then, punching the holes with a sharp awl, take two or three stitches in the *vulva* with silvered wire of the size of bell wire, cutting off the wire for each stitch, and uniting the ends by a twist at one side. In case silvered wire can not be got, strong silk twist may be used, each stitch being tied separately and the thread cut. An opening at the lower end big enough to insert two fingers must be left for the passage of urine. The sewing is not a very painful operation to the cow. She should, however, be supported by a surcingle passed under her hams and tied by ropes to a beam forward and above the animal. The family physician, if a humane man, would advise in such a case.

Am. Dairymen's Association.—The fourth annual report of this Society, accompanied by that of the Ohio Association, has been received from the Secretary, G. B. Weeks, of Syracuse. These reports are not only what is implied by the name, but reports of the advance of knowledge on dairy matters in this country, and as such of great value to all engaged in the dairy business. They may be had of the Secretary for the annual membership fee, \$1. An octavo of 133 pages.

Not "Hog Cholera."—No doubt several diseases of the bowels, or in which the bowels are affected, pass under this name. A cure for one may not affect the others. "S. O.," of Delaware, has used copperas, and found $\frac{1}{4}$ to $\frac{1}{2}$ pound, dissolved in hot water and added to a barrel of swill, an efficient and safe astringent in a case of long-continued scours accompanied by vomiting, in hogs. His brother used it with the same effect. This may be a very valuable remedy for this disease, which is not Hog Cholera.

To Prevent a Cow Kicking.—"C. R. D.," of East Hampton, Mass., writes: "Some one says: 'Tie the hind legs together.' That may do it, but I prefer to use a strap buckled tight around the cow, just forward of the hips and bag. It is impossible for any animal to kick, to do any harm, if so fixed, and they will not try it many times. I cured a very vicious one in that way some years since,—one that it would have been almost impossible to have tied around the legs."

Salt and Water in Pastures.—If animals at pasture can drink whenever they wish, they will never take a great deal at a time, but if they drink only twice or three times a day, they will frequently swallow surprising quantities, and we cannot believe this is healthy. The same thing is true of salt. Animals will

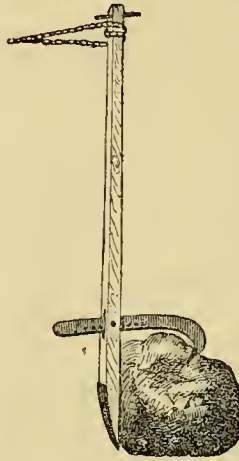
lick salt once or twice a day, or every day or two, if it is always within their reach, but if given salt occasionally they must not be allowed to take all they wish at once.

Secret Nests, spoken of in the April *Agriculturist*, are those which are made so as to be easily inspected and yet in which the hen is, as she believes, secure from observation. They are usually covered boxes with openings for the hens toward the wall, and with doors or lids in the rear to take out the eggs.

Name the State.—A large number of letters are received in which there is no clue to the State in which the writer lives. We frequently wish to address a person by letter, and often the reply will depend upon knowing whether the query comes from Maine or New Mexico. In the case of letters from small towns, stamps are not used for the postmark, and as the postmaster seldom writes on the name of the State, the postmark is of no use in informing us where the letter is from.

Protecting Gun Barrels from Rust.—"G. W. H.," says: "After cleaning the barrel and wiping it dry, lay it across the top of a stove until it is hot enough to melt beeswax, which must be rubbed all over it. Place the barrel in a cool place, so that the wax may harden, after which polish it with a piece of flannel. This leaves a very thin coat of wax, which will protect the barrel from rust for months."

Cant-Hook for Stones.—Thos. Tear, of Lake Co., O., says he finds "a cant-hook exceedingly useful to handle large stones with. You can catch on to some corner of the stones and roll them out of their bed and upon a stone-boat with ease. It saves a great deal of hard lifting."—It is very useful for many other purposes, but to be an efficient stone lifter it must be made strong, and furnished with a ring or cross piece at the end of the handle. It is better, also, to have it iron bound at the point, to save wear. The engraving here given shows the manner of constructing a cant-hook for this purpose as well as the method of applying it.



How to Use Lime as Manure.—"K. C. F.," Eldysville, Ky. We have more faith in large doses of lime than in small. One hundred bushels per acre will often so change the character of the soil that the beneficial effects will be observed for twenty or thirty years. A convenient way to apply the lime is to plow the land and then as the lime is drawn from the kiln put it on the field in heaps 20 feet apart each way, and a bushel of lime in each heap. Then cover the heaps with a few inches of soil, and as soon as the lime is slaked, spread the whole evenly over the land with a shovel, and harrow or plow it in, and sow the crop. This gives about one hundred bushels per acre, and as none of the lime has to be thrown more than 10 feet it is easily spread. We should prefer to use the lime on a summer-fallow for wheat, as this affords more time to attend to it. But it may be applied to any crop. If your land is drained, naturally or artificially, and is well summer-fallowed and then limed as above, you may expect good wheat and good clover, and no matter how much it is "worn," when you have once got good clover you can easily make your land bring large crops.

Rotation of Crops in Virginia.—Mr. N. B. C. asks our opinion as to whether stock raising could be made profitable in his section of Virginia, where clover is the only thing to be depended on. Tobacco was formerly the principal crop, and has done much towards reducing the fertility of the land. Peanuts have been tried, but he thinks the land too stiff for this crop. He also asks our opinion of the following rotation: Seven fields, 20 acres each. Corn, oats, wheat, clover, wheat, clover, clover. "This would give always two fields of wheat and three fields of clover. Would the three fields of clover support 30 head of cows and the calves necessary to raise to maintain the herd?"—If the land is much run down it would not support this amount of stock. Better try half the number to start with, and increase as the fertility of the land increases. Nothing is worse than overstock. If you understock, the clover can at any rate be used for plowing under as

manure. Corn, oats, wheat, is a profitable rotation when the land is rich enough to produce large crops. But on poor land we should expect small crops and still smaller profit. If the land is "stiff," far better summer-fallow, than put in so much corn and oats. It will be better for the land and more profitable for you to have one field of wheat that produces 30 bushels per acre than two fields producing 15 bushels per acre.

What to Do with Bones when there is no Mill to Grind them.—"J. D. G.," Centre Co., Penn. Probably the best thing to be done with them is to sell them. They are worth more to the makers of animal charcoal than they are to you. There is no way of using them as manure to the best advantage without grinding them. But if you cannot either sell them or get them ground, dig them in around your grape vines or fruit trees, or break them as fine as you can with a large hammer, and make a compost of them with manure, sods, etc. The fermentation will decompose the organic matter of the bones, and the ammonia formed from it will be retained in the heap, while the bones will be softened and rendered more available as manure. To dissolve them put them in a heap; after breaking them with the hammer, and moistening them with all the water they will retain, pour on about 20 lbs. of sulphuric acid to each 100 lbs. of bones. By turning over the heap occasionally, the bones will be more or less decomposed. We have tried this plan, but never with entirely satisfactory results. We do not think the benefit generally equal to the trouble and expense. It is difficult to make a superphosphate without grinding the bones.

Potatoes on Drained Land.—Thomas Tear, of Lake Co., Ohio, says he has been underdraining and finds it very expensive work, costing him \$70 per acre. This is too much. But he finds it not altogether unprofitable, for he says, "on a piece that I underdrained, I raised last year 400 bushels of potatoes per acre with ordinary culture. Previous to this I have never been able to raise more than 200 bushels per acre on undrained land. At 35 cents per bushel, the excess of the first crop alone would have paid all expenses—and one hundred per cent on each following crop."

Resources of the Country.—The following may be taken as the type of many letters: "Would you like to have a description of the resources of this country?" Yes; but to agree to publish it, No. We have every desire to aid in the development of every part of our common country, and especially those portions which need settlers and offer excellent inducements to them. We have published one or two communications, which have called out many others, and we now might each month nearly fill our paper with letters advocating this or that particular section. It will be seen that a journal which goes to every one of the United States and every geographical division of the globe cannot devote its space to advocating the claims of any one township. Letters giving information with regard to favorable localities for settlers are of use to us, as we often by this means place parties in correspondence with each other. We cannot advocate the claims of Virginia and ignore those of Minnesota; these older States must not take preference to the newer Territories of Idaho and Wyoming, which are pressing their claims upon us. Let our friends, North, South, East, and West, see that we cannot be the *American Agriculturist* and advocate the claims of one portion of our wide country and neglect the rest.

Disinfecting Powders and Deodorizers.—There are many recipes for disinfecting powders for use in stables and privy vaults. Carbolic acid, charcoal dust, chloride of lime, plaster, copperas, and many other materials, are frequently used for this purpose; one of the best of all disinfectants is the surface soil that lies at every man's door, made thoroughly air-dry, and sifted through a coarse sieve, to remove sticks and pebbles. It is cheap, easily obtained, and when enriched by the deodorized substances, forms an excellent manure.

Trouble with a Cistern.—"P.," Laconia, N. H., complains that he had a cistern lined with hydraulic cement, and that the water is impure from disintegrated cement. The cement was probably of poor quality. There is no trouble if good cement is used.

Salt Muck.—"E. F.," Cape May Co., N. J. There is an article on the use of salt muck in the *American Agriculturist* for August, 1863. Prof. Johnson, of New Haven, has investigated the matter, and we shall have the results in one of his forthcoming works.

Oats or Corn.—Edwin Roberts, of Jefferson Co., Wis., wishes to know the comparative value of corn and oats as feed for the horse; their comparative

effects on his health and ability to work. In order to answer these questions we have looked up all the analyses of these two grains that we can find, and after all discover no two that can be compared. Chemists who have analyzed oats, instead of taking them as they are used, grains and hulls together, took the pains to separate them, thus making their work nearly valueless to practical men. However, the value of this grain varies exceedingly according as it is light or heavy, and it would be a very complete series of analyses that would really be useful. In common experience, corn is more heating and fattening than oats, and requires more care in feeding to horses. We know that horses are capable of enduring great fatigue when fed alone upon corn in the ear; that they will bear the steady hard labor of the farm, fed with cut hay and Indian meal, and that many horses are more inclined to sweat when fed in this way than when fed dry hay and oats. We think horses used for fast work or much on the road do decidedly better on oats in warm weather, and in cold weather too, if they are liable to be driven so as to sweat much. For all moderate labor we prefer corn meal, and if the horse has not much to do we practise light feeding, using one-third linseed meal. Horses are thus kept in good order very economically, and feel well. Herbert says two quarts of *old* corn may be fed sometimes instead of three of oats, and that new corn should never be fed to a horse.

Bees Notes.—By M. Quinby.

As June is the swarming month, and as the extent of swarming can now be controlled, it is proper for some bee keepers at least to decide which they will have—an increase of colonies exclusively, surplus honey solely, or a moderate quantity of both. Bees that are multiplied to the utmost ought not to be expected to store up surplus honey, any more than the hen that produces the greatest possible number of chickens can furnish a great number of eggs. It is well to know that when we have the movable combs, we can take our choice, if the flowers yield honey at all. If it be decided that the bees shall devote all their energies to storing box honey, and give off no swarms, first, if not already done, find the queen and clip one wing. Place in front of the hive the yard heretofore described, to prevent her leaving; then place in *close* contact with the combs of the hive, boxes to hold at least 150 lbs. All queen cells, preparatory to swarming, must be removed once a week. The boxes should be prepared with guide comb, attached as near the entrance as practicable. If it be wished to do a little at both—increasing the stock and storing surplus honey—the management is similar. I would clip the wing of the queen in any case, and keep off queen cells until the bees are well started in the boxes, and if it has been decided to have only one swarm, it is well to have it strong. Nothing is lost by waiting until the season is well advanced, if there is only room for *all* to work in the boxes. If there are bees enough for two good colonies at the time of division, they may be expected to finish up any number of boxes half full, in ordinary seasons. When the time arrives for making two of the one stock, take the middle of the day for it, as it is the best time. Procure an empty hive, as near like the old one as possible. Move the old hive one foot to one side of the old stand, set the empty one the same distance the other side, take out half the frames, open the full hive, and transfer half the contents—combs, bees, and boxes—to the other, fill out with empty frames and boxes, close the hives, and stand at one side to see the returning bees enter. If one is getting the most, move it further away from the old stand, until the other seems more like home. If at last one has much the most, take out a comb or two, and give to the weaker one. This management will do when colonies are to be multiplied exclusively, unless they are divided about the time they would be strong enough to go into the boxes. When divided as here recommended, one part of the original colony, of course, will be without a queen. At the time of operating, if any cells containing young queens are discovered, try to see into which part the old queen goes, and remove *all* from that division; leave only one in the other to hatch, unless the superannuaries are wanted somewhere else. Should there be no such cells, two days afterward you will find several commenced in the hive without the old queen. If we wish to multiply bees to the utmost, we must bear in mind that there is loss every hour that a colony with combs is without a laying queen. An arrangement to provide laying queens for all these occasions is a good investment. In rearing queens artificially, the best success is attained by selecting brood not more than three days from the egg, and in combs that are new. If obliged to take that which is old and tough, cut off the ends of the cells with a very sharp knife, leaving them not over one-fourth of an inch in depth, and the lower edge still less. Use not less than three combs, and put the brood in the middle one. These

combs may be 6 inches square, or of full size for hives. Put in honey to last three days. When all is ready, get a quart or less of bees—young ones, that have never been out of the hive, if possible. (When most of the old ones are out at work in the middle of the day is a good time to obtain them). Shut them up for 48 hours, in a dark place, moderately cool. Let them out just at evening. On the 10th day some of the queens may hatch. Very often several cells are built. If you want to make the most of them, open the box or hive, whichever it may be, and carefully cut out all but one. One of these may be inserted into the combs instead of brood, for other nuclei—a gain of ten days in time. After the queen hatches, if fair weather, she may be expected to lay in eight or ten days, when she may be introduced.

The Use and Abuse of Barn-yards.

There is no doubt that all farm animals are benefited by exercise in the open air, and by basking in the warm sun on pleasant winter days. Therefore, every barn should have connected with it dry, pleasant, and well-sheltered yards; and the use of barn-yards ought to be confined pretty nearly to this single purpose.

When the barn-yard is made to serve as a feeding rack and as a manure cellar, the use degenerates into an abuse. Probably three-fourths of the cattle and sheep in the United States, or at least of those which are sheltered in any way, are fed mainly in open racks in the barn-yard; and on farms where corn is grown, bundles of stalks are thrown to them, and they are allowed to eat the leaves and the softer tops—the main body of the stalk, which, under proper use, is a valuable fodder, being trampled under foot and mixed with the manure. Stalks thus treated require a good part of the ensuing summer to bring them to a proper condition for application to the land. Of the hay thrown into the racks, the best part is eaten and the coarser parts wasted. It being the custom to feed in this way during the coldest and stormiest weather, cattle are obliged to stand exposed out of doors while consuming their fodder, and generally while chewing the cud. Thus, not only is fully one-half of the product of the field practically wasted, but that which is consumed is expended largely in making up for the loss of heat which the animal necessarily undergoes under such exposure. In the better farmed counties of Pennsylvania, where enormous stone barns are bursting with the produce of rich acres, and where the barn-yards are usually enclosed by high, cemented stone walls, it is not unusual to find, towards spring, a deposit five or six feet deep, over which the stock are constantly trampling, and which contains certainly more than one-half of the valuable fodder that has been wastefully thrown out for them to consume. These farmers boast of the immense quantities of manure that they manufacture and apply yearly, and certainly the results of the application are good. At the same time, the manure is very generally, even for use in the succeeding autumn, too coarse to be neatly spread over the soil; and its cost, considering the expensive material of which it is made, must reach an amount which, if it could be reduced to dollars and cents, would appall the farmers who use it. Probably even the best farms where this practice prevails would be able to winter from fifty to one hundred per cent more stock, if every thing that is raised were simply cut and carefully fed in mangers in the barn; while the resulting manure would be so much shorter, and ready for use so much earlier, that the system of farming might almost be revolutionized. If, in addition to cutting, the forage were also steamed, the result would be even better. But assuming as a basis that, by cutting alone, fifty

per cent of the fodder would be saved, we see that by a slight expenditure of labor—for with the use of a horse-power cutter, the labor would be very slight—the income derived from the use of forage crops would be fully doubled, and this with no appreciable addition to the interest on capital or to the cost of labor. Furthermore, the condition of the stock, the vigor and thrift of their progeny, the quantity and richness of milk, and the quality and quantity of wool, would be greater, with a smaller expenditure of material. There are many farmers who cannot, of course, for the want of suitable buildings, and from the real or supposed inability to employ sufficient help, adopt this process of cutting food, or even of feeding under cover; but we suggest to such, that it would be an advantage to be able to do this, and that its accomplishment should be one of the objects at which they aim.

There is a widely prevalent notion that animals are rendered hardier and more healthy by exposure, by having to “rough it.” This is nonsense, as will be readily acknowledged by any man who will compare the stunted animals of the colder regions of New England, whose principal shelter in winter is often the lee-side of a fodder stack, or a soft bed under a snow-bank, with the well-housed and groomed animals of any well-managed dairy farm. These latter keep in better condition, are much less subject to pneumonia, garget, and abortion, produce richer milk and finer calves, make more and better beef, and are, in all respects, nearer to the type which every farmer should desire to attain.

Butter Making.—How to Get a High Price.

A very brief and correct solution may be given to the problem, “How to get a high price.” It is, make very superior butter, and consign it to very good parties in New York, or other equally good market. Everybody who makes butter wants to get a high price. The highest prices, like high prizes in a lottery, fall to very few people; but, unlike them, are attainable by many. Were the quantity of the best qualities of butter to be ten times as great as it is, the price would hardly be affected. Great care, discrimination, and the neatest and most skillful manipulation, the best salt, the best packing, and lastly, the best cows, all combined, will not always produce the *very best* butter, or that which will bring a high price. There are natural butter regions in this country, and others in which the best butter is neither an artificial nor a natural product. The best dairy women of the favored districts utterly fail upon the others, and it has been repeatedly proved that the conditions for making good butter are beyond the control of the farmers, with the knowledge we now have. Prevailing habits of dairy folks in some parts of the country capable of producing most excellent butter damage this product. *Overworking*, alluded to in the April number, is a not uncommon fault. *Poor salt* spoils much butter. There is no better salt in the world than that which may be made at Syracuse, N. Y. Professor Johnson says of it (See American Agricultural Annual, 1868): “The purest salt made in this or any country, that the writer is acquainted with, came some years ago from Syracuse, N. Y., when the ingenious processes of Dr. Goessmann were then employed. If, as we suppose, the same processes are in use now, the ‘Onondaga Factory Filled Salt’ must take rank second to none,” etc. Nevertheless, there is a lack of uniformity in

salt bearing this brand, and it can be used only with extreme caution. Pure salt must be perfectly white, odorless, and free from bitterness; it must dissolve in cold water without leaving any sediment or making a froth or scum, and the brine should be as limpid as pure spring water, and possess no taste but that of saltiness. A little dry salt laid upon paper should remain apparently dry in the ordinary living rooms of a family. The best Liverpool Salt will stand these tests, of which "Ashton's Factory Filled" has the highest fame and price, but is probably no better than other good brands. Butter ought never to be made in a hurry. Deliberation enough to have every thing just right is the salvation of many a churning. Taking the temperature of the cream by a thermometer is poohed at by many good butter makers, but it is best for most people to have no guess-work, and to see that the cream has a temperature of 62°, or a little higher, but not 65°. The heat increases during churning, and by the time the butter comes is usually high enough (between 66° and 70°) to promote the gathering of the butter; otherwise,—that is, if the butter is hard and granular,—the addition of a little warm water dashed in while churning will effect the object. Risk attends the common practice of half working butter, oversalting, and setting it aside to be thoroughly worked the next day. Parts of the butter are likely to whiten, and no amount of working will then prevent a streaky, marbled look before the butter is spoiled by being over-worked. The buttermilk ought to be almost all worked out, the butter salted, and, after standing a short time, worked again. This secures a uniform salting, and though the butter will need working the next day, it will never be found streaked. Buttermilk contains some cream and casein in solution. Simple working causes the removal of these substances with the buttermilk. Washing removes all very completely, but also abstracts a notable part of the flavor. Salt aids greatly in the removal of the buttermilk, that is, water; but the most important part of the buttermilk, the casein, is chiefly left behind. Therefore, to make butter which will be of fine flavor, and will keep, it is usually necessary to wash it after working out most of the buttermilk,—the butter-maker realizing that the use of water is an undesirable necessity. After this, it may be salted, and after standing, worked. Most of the water being removed, it is re-salted if necessary, and left with only salt enough to make a strong brine with the little water that remains. There is always room for the exercise of great discretion in working just enough, in washing, and salting, and stopping. Fine butter is truly a work of consummate art.

Experiments in Feeding Cotswold-Merino Sheep.

Dr. M. Miles, Professor of Agriculture in the Mich. Agricultural College, has made some experiments in feeding sheep with clover and Timothy hay, Swede turnips, and Indian corn. On the 2d of November, 1867, eight grade Cotswold lambs, the produce of a thoroughbred Cotswold ram and common Merino ewe, were placed in four pens, two in each pen. The sheep in all the pens were allowed all the clover-Timothy hay they would eat. It was cut into chaff, weighed out to the sheep, and any that they did not eat was taken out of the troughs, weighed, and deducted. In addition to this food, Pens 1 and 2 had sliced Swede turnips and corn, Pen 3 had nothing but corn

and hay, and Pen 4, sliced Swede turnips and hay. When the experiment commenced, (Nov. 2) the sheep were from 5½ to 6½ months old, and averaged 86 pounds each. This in itself is an interesting fact. It shows how easily we can supply any demand that may exist for good lambs or good mutton. All we have to do is to use a thoroughbred ram of some of the mutton breeds of sheep. The experiment lasted thirty weeks. The average weight of the sheep at the commencement of the experiment and at the conclusion was as follows:

	Description of food.	Average weight of Sheep Nov. 2.	Average weight of Sheep May 29	Gain of each Sheep in 30 weeks.	Gain per week.
Pen 1.	Corn, Hay, and Roots.	87½ lbs.	95 lbs.	7½ lbs.	0.24
Pen 2.	Corn, Hay, and Roots.	84 "	119½ "	34½ "	1.15
Pen 3.	Corn and Hay.	86½ "	125½ "	49½ "	1.64
Pen 4.	Roots and Hay.	84½ "	99½ "	14½ "	0.49

One of the objects of the experiment doubtless was to ascertain the feeding value of roots as compared with corn. Taking the results as they stand above, there would seem to be little advantage in feeding roots in this climate. The sheep with corn and hay alone gained half a pound a week more than those with corn, hay, and roots. The explanation of this fact is simply this. The sheep in Pen 2 were restricted to a quantity of roots and corn supposed to be equal in nutriment to the amount of corn fed to Pen 3. The result shows that the value of roots was not equal to the estimate. So far, so good. It remains to ascertain the value of roots when fed in addition to a full allowance of grain. If Pen 2 had received as much corn as Pen 3, and all the roots and hay they would eat in addition, we should probably have had different results. The point in feeding is, to get animals to eat and digest as much food as possible. The sheep were weighed each week, and we can therefore compare the results at different periods. Dividing the experiment into three periods, of ten weeks each, we have the following interesting results:

Food consumed per head per week during the 1st 10 weeks.

Pens.	Roots.	Corn.	Hay.	Total food cons'd.	Average weight of Sheep at com. exp't.	Weight at end of 10 wks.	Gain.	Loss.
1	13½ lbs.	2 lbs.	9 lbs.	24 lbs.	87½ lbs.	84½ lbs.	3½ lbs.	3½
2	13½ "	2 "	9½ "	25 "	84½ "	86½ "	2½ "	1½ lbs.
3	25½ "	1½ "	10½ "	37½ "	86½ "	95 "	8½ "	8½ "
4	25½ "	1½ "	9½ "	35 "	84½ "	80½ "	4 "	4

2d 10 weeks.

1	19½ lbs.	2 3/5	6½ lbs.	28 lbs.	84½ lbs.	89½ lbs.	5 lbs.	
2	19 "	2 3/5	14½ "	36½ "	80½ "	105½ "	25 "	19 "
3	36½ "	6½ "	16 "	58½ "	97 "	114½ "	17½ "	19½ "
4	36½ "	6½ "	12½ "	55½ "	80½ "	97 "	16½ "	16½ "

3d 10 weeks.

1	26½ lbs.	3½ lbs.	5½ lbs.	36½ lbs.	89½ lbs.	95 lbs.	5½ lbs.	
2	26½ "	3½ "	13½ "	43½ "	105½ "	118½ "	13½ "	15½ "
3	47½ "	8 "	15 "	70½ "	114½ "	135½ "	21½ "	21½ "
4	47½ "	8 "	11½ "	67½ "	97 "	99½ "	2½ "	2½ "

During the first ten weeks, the only sheep that did well were those in Pen 3, which were allowed 2½ lbs. of corn a week extra instead of 13 lbs. of roots. They also ate a little more hay. Years ago, John Johnston gave it as his opinion that, in wintering sheep on straw and corn, or oil-cake, the sheep would eat as much or more straw when allowed grain than when fed on straw alone. During the first ten weeks, it is evident that, with the exception of Pen 3, the sheep scarcely ate food enough to sustain the vital functions, and consequently gained little or nothing, while some actually lost weight.

During the next ten weeks, Pen 3 was allowed more corn, and the sheep also ate more hay, and consequently gained rapidly—nearly 2 lbs. per head per week. In Pen 2 the sheep also ate more than they did during the first ten weeks, and they also gained rapidly. In Pen 1

the sheep ate little and gained little—only 1½ lbs. in twenty weeks.

During the next ten weeks we have the same general result. Pen 3 had over 1 lb. of corn to each sheep a day, and probably this was all that they could digest, as the consumption of hay fell off a little. A few roots might have aided digestion, and given a greater gain. But, as it is, the gain is large—over 2 lbs. per week.

In explanation of the fact that Pen 1 did not gain as much as Pen 2, though both had the same allowance of food, Professor Miles states that one of the sheep did not do well, and actually lost 20 lbs. in weight during the experiment. Even this fact is not without interest. It shows that farmers should not only provide their fattening animals with abundance of food, but that they should also secure animals that will eat it, and the best way to secure this is to breed from stock that has never been starved.

Working Bulls.

As we keep our bulls in this country, there is a vast amount of power that runs to waste which would be very willingly laid out. We might severely tax the strength and endurance of any bull, not otherwise overworked, and he would be the better for it—a surer stock-getter, and a sire of finer animals; and besides, which is after all the greatest advantage, we should thus be able to keep bulls until they are really aged. We need hardly argue the question, if a reasonable amount of labor is an advantage to the bull. It is a recognized fact, that a due amount of exercise is essential to the highest wellbeing of all animals, and especially those used for breeding. If this exercise be taken in hard labor, provided it be not excessive, the experience of thousands of horse owners, and of many bull owners, in this and other lands, shows it to be entirely beneficial. The farmer, then, is doubly the gainer. He has the labor of the animal, and the bull is better for it. Few farmers keep more than one bull, and hence it is that they are not more in the habit of working them. A bull may be worked alone with a suitable harness in a cart or wagon, and before the plow, harrow, or stone-boat. He is deliberate in his movements, but powerful, and a single bull will often do as much plowing as a pair of cattle. We have seen a bull turn a 12-inch furrow eight inches deep in sod with perfect ease, and walk as quickly as a "smart" pair of oxen. He must be put early in training, taught to be guided by lines attached to the nose ring, and put early at such labor as he can do. We do not place the bull or any of his kindred high in the scale of intelligence, but very high in a scale of animals with which habit becomes second nature. Cattle are not very easily taught, but when taught, may be relied upon. Bulls are usually dangerous, because so little exercised, and never fairly subjugated. To subjugate a bull, he must emphatically be brought under the yoke. There is a great difference in the disposition of bulls, and while we advise no one under any circumstances to trust a bull beyond immediate control, we fully believe that nine-tenths of the young bulls in the country, if put to work, would be docile and useful, and might be kept for ten or fifteen years, greatly to the improvement of our stock. The animals in the engraving on our cover are from a photograph of a pair of twins of Mr. J. P. Swain's high-blooded Jerseys, broken and driven with reins by his son. They are two-year-olds, very docile, and so near alike that few can tell them apart.

Ducks as Profitable Poultry.

If farmers or others are situated so as to be able to give ducks proper attention, even our common mongrel varieties may be made the source of great profit. Next to the pigs, there are no animals on the farm which will dispose more rapidly of a quantity of feed, or show by rapid growth that it is better digested. In fact, we presume that were weights carefully taken, it might be shown that ducks would convert a given quantity of grain and grass into meat in a shorter time than even pigs, and very likely they would beat the swine, both in time and quantity of meat. We should be glad to record some careful experiments bearing upon this point. In selecting varieties for profit in eggs and flesh, two breeds present themselves which are decidedly superior to all others, and between which there is little choice. These are the Rouen and the Aylesbury. Both are of the largest size, and both good layers, setters, and mothers, though the Aylesbury is claimed to be less awkward and clumsy. This claim, we think, is founded more upon the fact that it ordinarily weighs a little less, than upon any positive graces. There is a well-founded claim also in favor of the Aylesburies, that they are earlier and longer layers. This is disputed by some of the champions of the Rouens, and there is probably really much less difference between the choice specimens of the two breeds than between different birds in the same duck yard.

The Wild Mallard (*Anas boschas*), is probably familiar to almost all of our readers, either in its wild state, or in the market. This fine bird is regarded as the parent of all the varieties of the common duck. The plumage of the Aylesbury is perfectly white, while the colors of the Rouen

correspond in both ducks and drakes with those of the Mallard. These colors, it may be noticed, are the most usual among our common ducks, from which the Rouens apparently differ chiefly in size; they are, however, a distinct breed, the more subtle characteristics of which must be closely adhered to in successful breeding. One of their most useful peculiari-

ties is, that the ducks approach the drakes in size more nearly than in any other variety. The general form of the Rouens is long, and deep, and broad. They are broad backed and broad breasted. The legs are short, the thighs thick, and set wide apart. The skin of the abdomen is loose, and often hangs in a fold, like a boat's

bill, past the eye, and a distinct "ribbon mark" of purple, edged with white, on the wings. The plumage, is generally distinctly pencilled—rich dark brown upon a grayish brown ground; on the back and tail coverts, the colors shade into light brown, marked with greenish brown. The legs are orange, or brownish orange. The

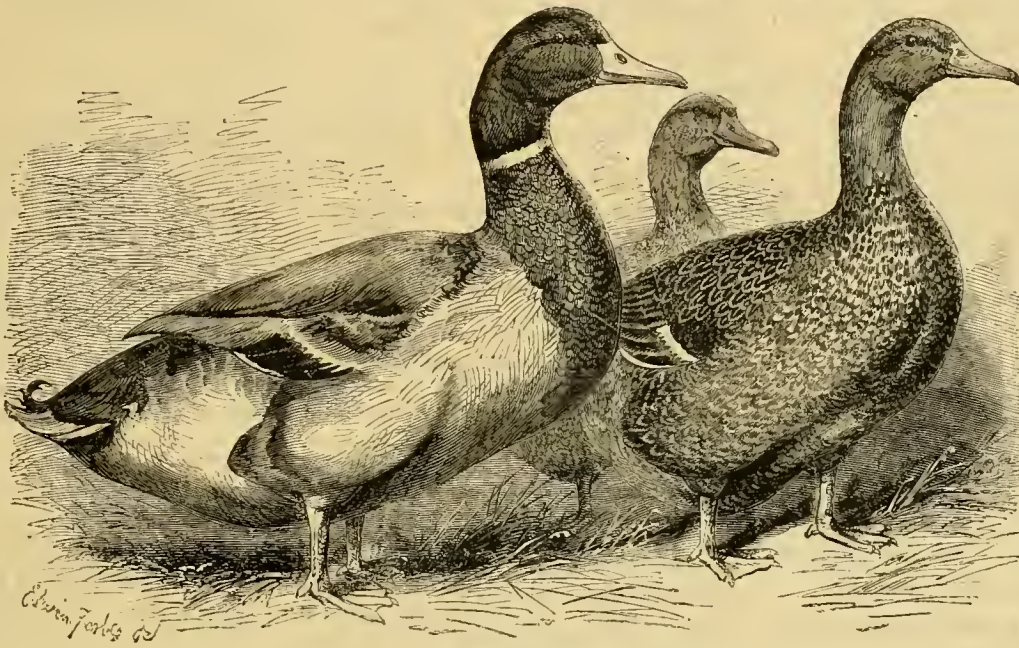
general form of the Aylesburies is similar to the Rouens, but more delicate, especially about the heads and necks. The plumage is pure white throughout—the snowier, the better. The bill is long, broad, straight from the top of the head to the tip of the bill, of a delicate flesh color, free from spots of any kind. The legs are bright orange.

Ducks begin to lay in winter or spring, as soon as the weather moderates, and, if well fed and housed, they rarely fail to lay an egg a day, until near the end of their season, for two or three

months, or even longer. Duck eggs must be carefully handled, or they will not hatch; and though ducks are careful and good setters, they are not so easily managed as mothers as are hens; hence it is usually best to set the eggs under hens. The young should be kept in a close, dry pen, with a dish of water not large enough for them to wet themselves in at first, for which a tub or trough is afterwards substituted. They eat any coarse meal wet up;

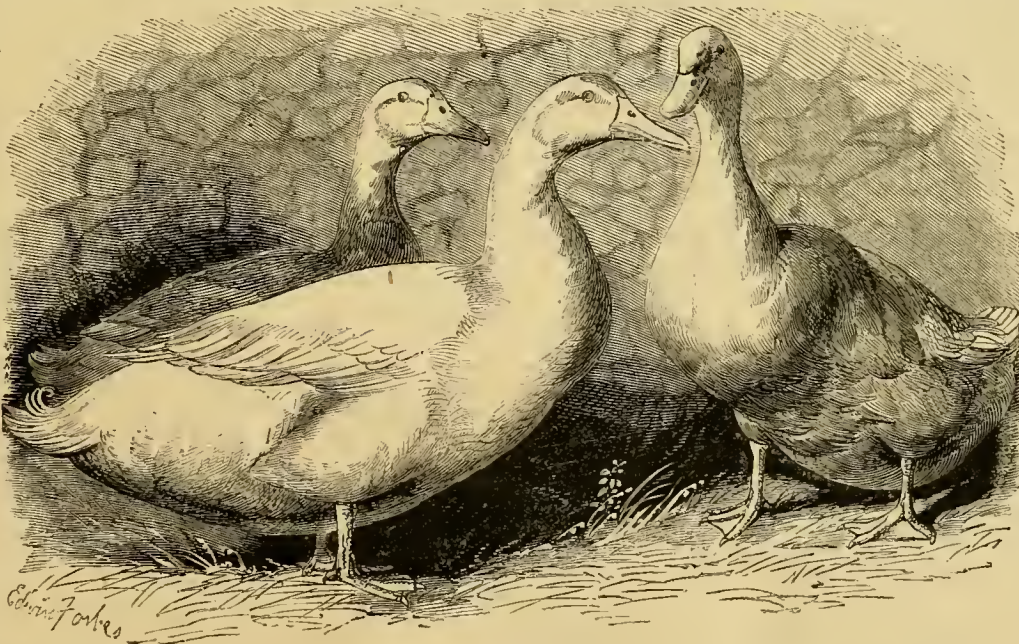
crushed oats and barley are excellent. They need some green food, and are benefited by fresh meat in small quantities. As soon as they are fledged, the hen may be removed, and the ducks given their liberty; when in marshes or ponds, they will pick up nearly as much food as they need, unless they are forced for early marketing. They bring about the same price as chickens, and are usually fit for market much earlier. Duck eggs bring a good price, selling at 5 cents each when hens eggs are worth 3, and are well worth the

difference. With many persons, they are a favorite article of food simply boiled, and in cookery they go much farther than hens' eggs. The slight difference in flavor is esteemed by few, and while that of duck eggs is esteemed by many, it is, so far as we know, disagreeable to none. The color of duck eggs varies from bright blue to white, but the smooth alabaster texture



TRIO ROUEN DUCKS.

keel; and it is probably this lack of support from the skin that causes the tendency in over fat birds to become "down behind," that is, to have the abdomen hang down, and drag upon the ground. The bill of the drake is long, (the longer, the better), broad, rather wider at the tip than at the base, and nearly straight from the crown of the head to the tip; it is greenish yellow, without other color except the black "bean" at the tip. The head is long, fine, and



TRIO AYLESBURY DUCKS.

green; the eye, dark hazel. The neck is long and slender, green, like the head, and having a clear, narrow ring of white nearly encircling the neck, from the throat backward. The legs and feet are orange colored, with a tinge of brown.—The duck's bill is brownish orange, with a dark blotch on the upper part. There are two pale brown stripes from the sides of the

work done. I have no doubt that one plowing with the steel plows is equal to two with the old dirt-rooters that pushed over four or five inches of soil, and required more team than the bright little steel plows did when running half as deep again. But it was no use. Those steel plows have been knocked around for five years, and were used only when we got out of points for the cast-iron ones. But slowly and steadily they worked their way to favor, and now every man on the farm wants a steel plow, and I was obliged to order a new one this spring, although we have half a dozen or more cast-iron ones. The prejudice of not a few farmers and a good many farm men is something stupendous. Even the Deacon thinks the steel plow cannot run as steadily in dry land as a cast-iron one of the same form, because the dirt slips off so smoothly from the mould-board, while in the cast-iron one the furrow-slice adheres to the mould-board, and keeps the plow in its place. There is, of course, nothing in this; but even if there was, four-fifths of all our plowing is done while the ground is moist, and a steel plow will do good work when the soil is so wet that a cast-iron one would glod. For my part, I am satisfied that the "coming plows" will be made of steel. Not only are they lighter, and stronger, easier on the team, and do better work, but the saving of points alone will soon pay the cost of the plow. A blacksmith can sharpen a steel point in a few minutes, and can give it less or more "bite," according to the nature of the ground.

Our gang plows must also be made of steel before they will really be the useful implements they are calculated to become, and no cultivator that is not made of steel should ever be used. And so of Shares' Harrow, so-called. It would be an exceedingly affective implement for covering seed on sod land, if the teeth were made of steel. And who that has ever used a good steel garden rake can doubt, that if the teeth of our ordinary harrows were made of steel, bright and sharp, they would do vastly better work? I hope some worthy American inventor will yet make his fortune out of a good steel-toothed harrow; our common harrows are not harrows at all. They are only "drags." They are the poorest and least improved implement now used.

A farmer in Iowa writes to know what is the value of Hungarian grass, to plow under when in blossom, as a manure, as compared with clover, which is not a sure crop with him. And another farmer in Illinois asks the same question in regard to timothy and red-top. None of the "grasses," such as wheat, barley, oats, Indian corn, timothy, red-top, etc., are more than half as good, except for weight, as clover, to plow under for manure. Peas would be far better. If the clover fails because the land is wet, nothing will do it any good except draining. If it fails because the land is mucky, there is no need of plowing under any kind of crop. The soil contains already an abundance of organic matter, and this is all that we gain by plowing under crops. Not a particle of mineral matter is added to the soil. Good tillage, by exposing the soil to the atmosphere, and favoring decomposition, will develop the plant-food, of which there is undoubtedly an abundance now lying dormant in the soil. Draining and good culture are all that such soils need to make them very productive. And then by stocking down with good grasses, and pasturing them half the time, their fertility may be maintained, and in fact increased. Of course, all the manure that can be made on the farm should be saved and applied. The basis of the improvement is

draining and good tillage. A year's fallow, on such land, if thorough, will do more good than plowing under a year's growth of any crop. On a calcareous loam, deficient in organic matter, plowing under clover has an exceedingly beneficial effect, and the effect is obtained at least a year sooner than if the crop was made into hay and the manure obtained from it returned. But with good mowing machines, rakes, and unloading forks, that enable us to make hay at half what it formerly cost, and with the present and prospective high price of beef, butter, and cheese, it seems a "shame" to plow under good clover hay.

A subscriber to the *Agriculturist*, at Tipton, Ind., writes: "In your April Walks and Talks you mention the fact that you commenced a ditch, but for want of sufficient fall, abandoned it. What is the least fall per rod at which tile drains will work well? We have a level country, and many persons are afraid of tile on account of the fall."—An experienced English drainer says a properly laid underdrain will work well with a fall of one inch in seven hundred feet. The way I cut drains on low, level land, is to commence at the main ditch or stream, dam it up a couple of inches, and cut the drains so that a quarter of an inch or so of water will follow the ditches. This cannot be done properly without the long-handled narrow scoop, described in the *Agricultural Annual* for 1867, but with it a drain can be cut as smooth and true as a planed board. When the ditch is finished, take away the dam, and lay the tile; put no stones or straw on top, but shovel in the dirt, taking care that it does not get into the joints, and I will guarantee that the drain will work well. I think there can be no doubt that a drain laid in this way, with two-inch tile, twenty-five or thirty rods long, would work well; as, if the tiles are full of water at the upper end, and there is a free outlet below, there is an actual fall of two inches in the tiles themselves, supposing them to be laid on a dead level. Furthermore, I have drains laid with very little fall, that frequently discharge into a stream in which the water is a foot above the tiles, and yet the drains are perfectly effective. If the drains are three feet deep, we get in this case two feet of drainage, and the water in the other foot below is constantly changing, which prevents all injury from stagnation. The fact is, there is vastly less trouble about draining than most people imagine. It is almost impossible to lay the tiles so that they will not work, provided they have a free outlet or discharge into a running stream. Of course it is unwise not to lay the tiles with great care, but it is nevertheless a fact that, on my farm, I have had drains laid when the water in the ditches was over the tiles, and when I certainly feared the mud would stop them up, and yet, so far, every drain works well, and I see no reason to doubt that they will work just as well for all coming time. If the water is running freely through the tiles when the dirt is thrown on to them, there is no danger, so far as my experience goes, of their ever filling up. Even in quicksand I should apprehend no trouble provided the drains are sufficiently numerous to dry the land completely. If they once carry off all the water without filling up, there is no farther danger. It is the excess of water in the land when the drains are first cut that causes the trouble. When the drains once get fairly at work, there will never be so much water again, and consequently very little danger of the sand washing into the tiles.

I am going to ask Mr. Judd to come and see my farm again this summer, and I think he will find no wild mustard in the field that I summer-fallowed for barley. So far, the system more than comes up to my expectations, and I intend to follow thirty acres this summer and autumn for barley. There are a good many stones in the field, and I feel satisfied they will never be got out in the ordinary course of farming. Take this spring, for instance: the season was so late, and we were necessarily in such a hurry in plowing for spring crops, that the thought of stopping to get out a stone seemed little less than madness. But fallow for barley, and then as soon as you are through sowing winter wheat, plow the fallow, and make a business of getting out every stone that the plow strikes. My barley fallow has given rise to considerable comment. One of the wealthiest farmers in the neighborhood one day asked, "What are you going to do with that field?" "I am fallowing it for barley." "Well," he replied, "it may pay you, but it would not pay me. I cannot afford to wait so long for a crop." "What would you have done with the field?" I asked. "Sowed it to wheat," he said. "Very good. Now, if I had sowed it to wheat, when should I have harvested the crop?" "Next August." "Very well; and when will the barley be ready to harvest?" "It won't pay, any way," he replied, and drove off. I wish the intelligent farmers of the country, however, would try the plan. I can think of no other system of rotation so well calculated to clean the land, and to lessen the amount of manual labor, as to allow the land to lie exposed to the ameliorating influences of the atmosphere for so long a period, without dispensing with a crop. In fact, it gives us all the advantages of a long fallow without the loss of a single crop, and that at a time when we have most leisure for working the land. There is one thing in which farmers are certainly improving. They cultivate their corn much more thoroughly than formerly. The old plan here was to cultivate it once both ways, and then hoe it. And then, in the course of a few weeks, cultivate it again, throwing the soil to the hills, and then dress it up with the hoes. And this was considered rather extra culture; it was what farmers aimed at, and they rather congratulated themselves when they could accomplish it. Now, thanks, mainly, as I believe, to the teaching of the agricultural press, the idea of a certain number, and only a certain number, of "cultivarings" being necessary is given up, and the more energetic farmers cultivate as often as there are any weeds to kill, and many intelligent and experienced men who have tried the plan cultivate once a week or ten days, whether there are any weeds or not. This constant stirring of the land develops the plant-food in the soil, and also keeps it moist, and, especially on a rather heavy loam, adds from twenty-five to fifty per cent to the crop, while the land is in far better condition for the subsequent crops of barley, wheat, and clover. I believe in "clover and plaster." I believe in making rich manure, and a good deal of it. I believe in carefully saving and applying it, and also in using artificial manures; and I believe in lime and muck, and salt and ashes; but before all, and above all, and beyond all, I believe in underdraining and thorough cultivation. I have no heart to talk about scientific agricultural questions, although I read nearly all that is written on such subjects. The one thing that we most need, as farmers, is to be convinced of the importance and advantage of killing weeds and making the land mellow.

Farm Sleds for Winter and Summer.

In some parts of the country there is a constant use made of sleds in summer, and very wisely, we think, as we always advocate the employment of animal labor to save hand labor when it can be done economically. But even if one does not intend to do any sledding upon

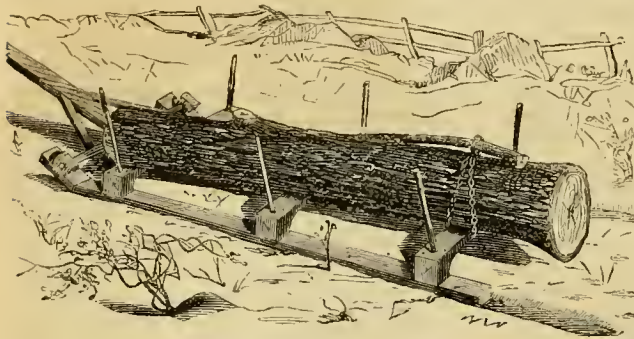


Fig. 1.—STARK CO. SLED.

bare ground, the sled pattern here presented is worthy the attention of farmers now, because they may take the leisure and rainy days of the present and coming season to have the stuff sawed and put together before snow. The plan was sent to us by Mr. H. D. Smalley, of Stark Co., Ohio, who says it is much in use, and very popular among farmers in his vicinity.

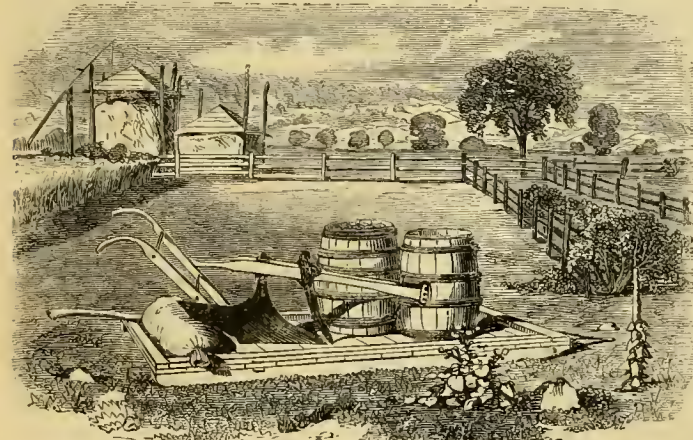


Fig. 2.—TOOL-SLED OR TOOL-BOAT.

Mr. S. writes: "It is so easily made that any farmer can make it; and I will guarantee that after one week's using it, he will not be willing to be without one on his premises. The runners are sawed out of sound hickory, the crooks coming out of the but of the log, in the same manner as stone-boat plank are sawed, except that they must have a little more crook,



Fig. 3.—BOX FOR TOOL-SLED.

say 6 inches in a length of 10 or 12 feet. Their width is 5½ or 6 inches, and their thickness 2 or 2½ inches; the beams are made of 6×6 oak scantling. The first beam is set 20 inches from the crook, pinned to the runners with inch pins, set diagonally and drawing a little, and wedged on the under side of the runner. The roller-gudgeons enter 3-inch blocks, bolted to the tops of the runners with two bolts each. No raves are needed. The stake holes are bored slanting through the beams, and so as to miss the inside of the runners; otherwise they will fill with dirt. Advantages:—It is so low, a man using skids 8 feet long can roll on an ordinary saw-log with a handspike, thus saving unhitching and hitching

his team; it is not liable to upset when loaded; will not cut in in crossing soft places; when there is but little snow, not enough to run an ordinary sled, a team can draw a heavy log with ease; it is not so liable to break in crossing uneven places; and passes over obstructions easily. In short, its superiority is so manifest, that it needs but a day's trial to establish it."

This sled, of universal, summer and winter utility, so to speak, leads to the consideration of *Summer Sleds*.—There are a multitude of uses to which a light sled can be applied throughout the year, and the additional labor imposed upon the horses is very little. We give herewith a sketch of a tool-sled, or drag, which is an improvement upon one the writer has in daily use, and not unlike one described in the *Agriculturist* for May, 1866, but lighter. It is eight feet long, and three wide. The runners are two four by four scantling, or other pieces of hard wood, though red cedar will do. There is a floor of inch boards, and 1½×3-inch raves nailed upon these. One-inch oak pins are used to fasten the parts together, and three or four carriage bolts on each side are an additional security. These should pass through runners, boards, and raves, the heads being well sunk in the runners, and the nuts on the top provided with washers. The sled is drawn by hitching the team to a clevis in the front, or better to a sort of bale—an iron rod, bent at a right angle, and attached to both runners. We transport upon such a sled, or "boat," plows and harrows, potatoes for planting, fertilizers in bags or barrels, and any similar things. It is provided with four stakes, like a cart. Fig. 3 shows a box which fits upon the top of the rave, and is held in place by strong cleats, which enter the stake staples. This addition converts the tool-sled into a very different affair. It is a handy thing with which to gather up the stones in a mowing lot, to haul compost or manure upon plowed ground, for manuring in the hill or drill, and to distribute drain tiles along by the drains. Without the box, and simply with the poles, it may be used for moving fencing stuff, bean poles, bog hay, brush, and many other bulky things. This tool-boat will be found especially useful when men and horses are to be gone all day, to carry food and fodder, besides the tools, and almost any farmer having one will make one or two of different sizes.

Doors for Manure Cellars.

It is very important, when manure is received in a cellar directly under the animals, especially if there are openings in the floor through which much air could pass, that the door by which the cellar is shut off from the outer air should be so tight as not to admit strong cold drafts. The accompanying engravings show how a cart door to a cellar may be made tight, and yet so light

as to be easily managed by one person. Perpendicular swinging doors, owing to their liability to sag when made of large size, are objec-

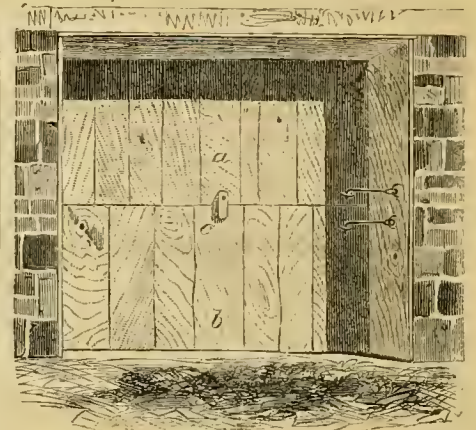


Fig. 1.—DOOR TO MANURE CELLAR.

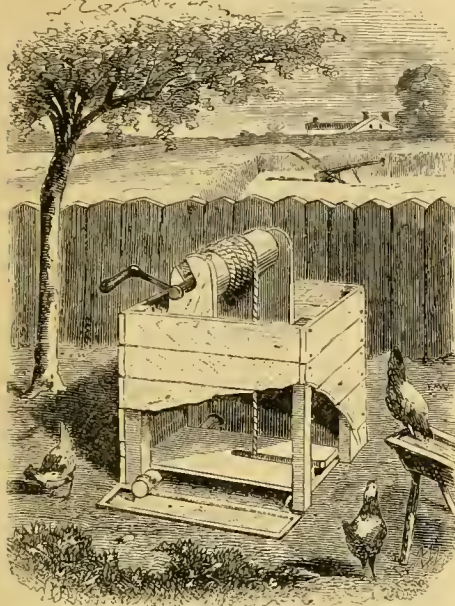
tionable. In fig. 1 the door is represented as closed. It is made in two parts: *a*, the upper section, is hung on strong hinges from the top of the frame, and swings inwards, where it may be fastened in a horizontal position, as shown in fig. 2, which represents a section of the same door. The part *b* is a movable low door, resting upon a chestnut sill, and fitting tightly into rabbets in the side post. The top of *b* and the bottom of *a* are so rabbeted as to form a tight joint, and to have their surfaces flush with each other. When *a* is shut down against *b*, it is fastened in its place by a wooden button, *c*. Both halves of the door *a* and *b* are secured to the jambs of the door with hooks.

Fig. 2.—SECTION OF DOOR.

Covers for Wells.

The water of our wells is often contaminated by dead animals, such as mice, moles, toads, etc., falling into it. This may be, in a great measure, if not totally, prevented, by a good curb set upon a stone or cement base. A more constant source of impurity, though not so disagreeable, is the falling in of leaves and such things, together with the dust and small particles of grass, wood, seeds, and insects. This can only be prevented by a cover, which, if it must be lifted by the hand, gives so much additional trouble to the persons who draw the water that they are apt to fasten it open, and it is almost never closed. To obviate this trouble several plans have been proposed. One of the simplest is that herewith figured. It is a slight modification of a plan sent to the *American Agriculturist* by Mr. V. Devinny, of Denver, Colorado Territory, and applicable to any well from which water is drawn by the bucket. It consists of a light cover made of matched half or three-quarter inch stuff, fastened to a four by four cross-piece at the back part of the well-curb. This cross-piece has a gudgeon of oak or iron in one end, and the other end is cylindrical and grooved to run in a bearing upon the sill of the well-curb, and extending through it, (some of the boards of which are removed in

the engraving). Outside the curb, and attached by a leathern strap or bit of chain to the end of the cross-piece, as shown, is a treadle, which works up and down in a box. One end of this rests upon a pin or cleat in the end of the box, or is hinged upon it. When any one wishes to draw water, he puts one foot on the treadle, and bearing his weight upon it, the cover rises, and he can raise the bucket; removing his foot, the lid falls of its own accord, provided some



A COVERED CURB FOR WELLS.

contrivance, like a lath nailed between the rear posts of the curb, prevents its passing the centre. The cover is made without the slot to receive the rope, only having a notch to "gather" it. With the slot, such a cover is perfectly applicable to wells that are worked with the old-fashioned sweep and pole.

Farmers and Their Hired Men.

Probably the difference between farming and almost all other kinds of business is more distinctly marked in the relation existing between the employer and his laborers than in any other way; and while we fully appreciate the kindly relations which grow out of the friendly companionship of isolated residence in the country, and of employment at the same work, we have been sometimes inclined to think that if a shade more, not of superiority, but of authority, were made to mark the difference between the master and the man, farming might become a more systematic and more satisfactory business. In saying this, we would by no means imply an approval of superciliousness of demeanor, of unkind treatment or manner, or of any lessening of the most friendly relations between two classes of people, who generally, except for the simple fact that one is the employer and the other the employed, stand on the same level of education and intelligence. We only mean that no work can be successful that is not systematic. No system can be carried out in which there is not one head, responsible for the working of all subordinates, and for the conforming of all parts to the requirements of the whole.

There is a great deal of humbug in the matter of the giving of orders to farm laborers. The fact exists that the farmer is an employer, and the laborer an employé. He is employed to do certain things, and to do them when and as he is told to. If he fails in this respect, he

is, or deserves to be, dismissed from the service. He understands this perfectly well, and so does the farmer, and it is simple nonsense to convey orders in the honied phrases,—“Suppose you feed the oxen,” or, “You may hoe corn awhile to-day, if you have a mind to.” If it is the man's business to feed the oxen, it is the master's business to tell him to do so; and, it being perfectly well understood that the corn is to be hoed, and hoed according to orders, there is no sense in seeming to leave it to the discretion of the workman. An order to do a given piece of work is just as much an order when put in one form of words as when put in any other; and in our view, it implies a lack of good sense on the part of the laborer to suppose that he is not willing to be told in plain terms,—“To-day you will hoe the corn,” or, “It is time to feed the oxen.” If General Grant had replied to Sheridan's famous communication by saying, “You may push things, if you have a mind to,” much of the force and formal authority of his simple “Push things!” would have been lost.

Most of our American farm hands have been American soldiers, and they have become thoroughly used to being told what they are to do in plain English; and we know from our own experience that they would still prefer, in their more peaceful occupation, to have all of their directions couched in unmistakable, though by no means discourteous, language. It may be thought that this is a small matter to write an article about, but it is not. The manner in which authority is exercised over subordinates is an infallible indication of its value and effect; and the quiet determination which induces a farmer to tell his men in a manly and straightforward way what they are to do, indicates by no means that he considers himself better than they are, but that his work is being carried on according to an established plan, and that his plan will be executed with that promptness and dispatch which are indispensable to success in any walk of life, whether in the army, in the work-shop, or on the farm. Men who are worth having will prefer to have their instructions given to them in a definite form, as instructions, and not as hints; and the most successful farmer, other things being equal, will be the one who, in this respect, adopts the course that we have indicated.

Pigeon Houses.

Pigeons are valued both as ornamental birds and as furnishing an exceedingly delicate article of food. If kept for use, or if reared purely for fancy, pigeons must be kept in rooms secure from cats, rats, weasels, etc., over the stable or some outbuilding. This gives the

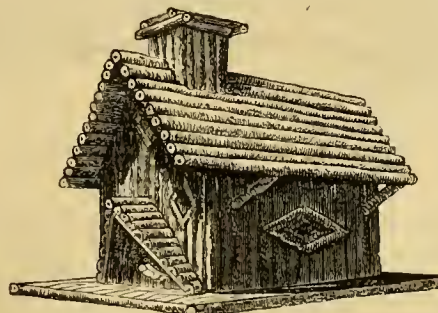


Fig. 1.—RUSTIC PIGEON HOUSE.

owner access at all times to the birds and their nests. The room is subdivided by lattice-work partitions into as many apartments as are desirable. When, however, persons do not

want to make a business of raising pigeons, and desire to keep only one, or possibly two, orna-

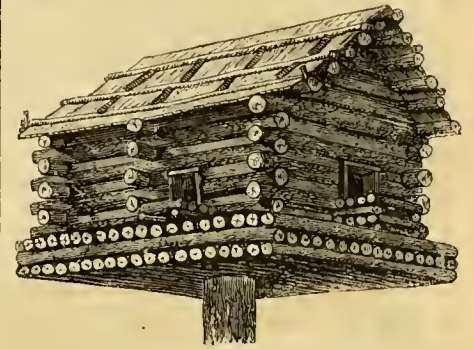
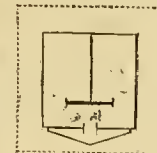
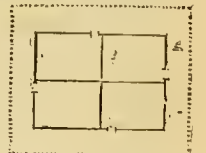


Fig. 2.—LOG CABIN PIGEON HOUSE.

mental varieties, it is very well to make the houses as well as the birds contribute to the



Plan 1.—20 x 20 in.



Plan 2.—24 x 30 in.

ornamentation of the place. We give herewith some engravings of simple “pole houses,” and

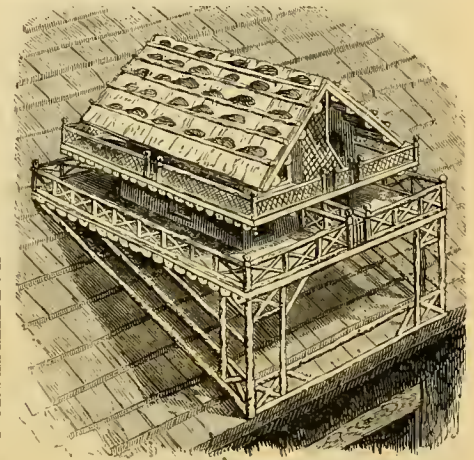
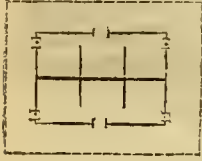


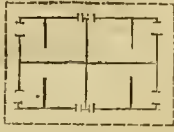
Fig. 3.—SWISS COTTAGE.

one which may appropriately be set, as exhibited, upon a roof. For convenience of examinations, pigeon houses should have the roofs keyed on so as to be lifted off. The roofs should have wide, projecting eaves and gable ends, to keep out the rain; and the houses should be fastened very securely by iron straps, shaped like the letter L inverted (⌋), screwed to the bottom of the houses, and to the side of the post. The post should be very smooth for several feet below the top, and painted, to prevent vermin getting to the pigeons. Fig. 1 and plan 1 represent a simple house, 20x20 inches, for a single pair of pigeons. This has two brooding rooms, and a vestibule or outside room connecting them. The pigeons will make a nest in one room, which is spacious, hatch a pair of young ones, and before they are old enough to take care of themselves, the hen will make another nest in the other room, leaving her mate to take care of the squabs, which, by the time the hen is broody again, will be set adrift. During the warm weather pigeons multiply rapidly, and the squabs must be provided for in some way, or brought to the table, if the accommodations are not more spacious than these we are considering. This house, as is also the Log Cabin, fig. 2, is constructed of round and half round sticks of as nearly a uniform size as possible, which, after drying with the bark on, are tacked

upon a box made or adapted to the purpose. Fig. 3, a Swiss Cottage. This is a good deal larger than fig. 1, and will accommodate as many pairs of birds as there are distinct apartments. In plan 2, the four rooms measure 12x15 inches. No vestibules are provided, but each tenement is big enough for two nests if needed. The Swiss Cottage house is more elaborate, and will require a skillful hand and patience to make it. Each story of the house



Plan 3.



Plan 4.

should be made separate. The lower one should be at least eight inches high, and the lower piazza eight inches wide. The stones upon the roof should be wired to the cross-strips. Plans 3 and 4 represent the lower and upper stories respectively; 4, 6 or 8 pairs may be accommodated, according to the internal arrangement.

Plowing with a Single Line.

A correspondent of the *Agriculturist*, formerly a Connecticut farmer, and now cultivating a large farm in Virginia, gives the following account of the method of driving horses, "from one to six," with a single line. He says: "Take a stout leather line, one inch and a half wide, and say eighteen feet long,—it needs that length to harrow,—with a buckle on one end, and a loop for the hand on the other. The 'lead bridle' should have a rein extending about a foot back of the hames, with a ring in the middle; into the ring buckle the line; take it lightly in the left hand, letting it fall on the same side of the horse, step back to the plow, and you are ready to start. A steady pull is to turn haw, a light, sudden jerk, gee; horses soon learn with a little patience and perseverance, so that they can be driven with the utmost precision; and the miserable practice of pulling and jerking on the lines, alluded to by the writer of 'Walks and Talks,' is well-nigh impossible. Besides there is the great advantage of the driver always having his right hand for other work—holding the plow, clearing his harrow, etc. This is all the driving required for a one, two, or three-horse plow, or a four or six-horse wagon team. In the latter case, the near horse of the forward pair is the 'leader,' and all the others are guided by him; but the advantage is more apparent in a three-horse plow team than anywhere else. And here let me say that, on any stiff land, three horses makes the very best team possible, and almost the only one capable of doing a good day's work, day after day; and I believe six horses and two men will break more land, and do it better, in two teams, than if divided into three, with another hand.

But to hitch up a three-horse plow team,—1st, have a *left-hand* plow, arranged with one 'triple-tree,' one 'double-tree,' and three 'single-trees.' Put the lead horse in the furrow, and hitch him as before described; put on the middle horse next, hook his traces, lead him up square or even with the other. Have a small strap pass under his jaw, from ring to ring of his bit; to this attach a long strap, bring it back to the double-tree, and fasten it loose enough to give him room to pull freely, but not so as to run around the other horse. Then take a 'push stick' about four feet long, attach one end loosely to the left hame ring of the 'lead

horse,' the other to the right ring of the other's bit. Hitch the third or other horse in the same way to the middle horse, and you are ready to start. The 'leader,' walking in the furrow, easily guides the other two, and by the help of the 'push sticks' and coupling straps, he is enabled to turn them either gee or haw with ease. Left-hand plows work much better with this arrangement than right-hand, but both are used. Harrowing is done in the same way. I have dwelt thus at length on this subject, as I consider it so important, that I think the papers should make an effort to cause its general introduction in the North and West. And if you could get a few of our negroes to train your horses, it would be a good thing. I work six horses on my farm; all 'understand the line,' although but one did when I got them. This plan does not injure them for carriage horses, my best plow leader being one of the best and easiest driving buggy horses I ever used. Now, take a good-tempered, intelligent horse, and the same kind of a man, if you have one, tell him all about how it is done, set him at work with a single-horse plow, and see what progress he will make in one day; or else let him train him half an hour a day for a week, and then put in two, and then three, after your leader is trained. When once men and horses become accustomed to it, you could not induce either with ordinary inducements to go back to the old plan."

Tail-boards of Wagons.

The article in the April number of the *Agriculturist* suggesting the use of a chain, permanently attached at one end, instead of the usual rod to secure the tail-boards of wagons, brings us several practical and some quite impractical suggestions. A. W. Grover, of Oxford Co., Me.,

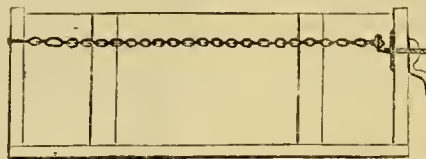


Fig. 1.—GROVER'S TAIL-BOARD FASTENER.

sends a genuine improvement upon the chain fastening by suggesting that, "Instead of having the screw bolt permanently attached to the chain, we make a hook on the bolt opposite the nut, so that when it is in place, a link of the chain may be dropped over it, and the whole then drawn snug by the nut. This avoids the necessity of taking off the crank nut." The arrangement is shown in fig. 1. The next suggestion comes from Harry H. Negley, of Alleghany Co., Pa., and is the substitution of a rod

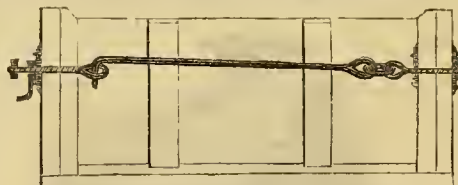


Fig. 2.—NEGLEY'S TAIL-BOARD FASTENER.

attached by a link and bolt permanently to one side, and having a hook at the other end, which fits into an eye attached to a screw bolt, to be drawn up by a crank nut, as in other cases. Mr. N. suggests also the use of a chain instead of the rod. The arrangement is shown in fig. 2, and it has these advantages over the other: The rod is cheaper than the chain, and the screw bolt will not have to be made square and work in a square hole, as the other will, to pre-

vent the chain twisting. A small nut is put upon the end of the screw bolt in fig. 2, and slightly riveted, so that the crank nut cannot come off. George Smith, of True Co., Ohio, describes and sketches a plan in common use

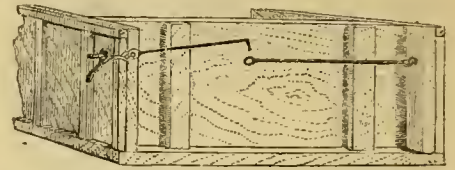


Fig. 3.—TRUE CO., O., TAIL-BOARD FASTENER.

in that section. It is shown in fig. 3, and consists of two $\frac{1}{2}$ or $\frac{3}{8}$ -inch iron rods attached to the sides by links, and forming a long hook and eye, which unite at the middle of the tail-board, and are drawn up tight by a screw bolt and nut, as in the other cases. This plan, it will be observed, is on the same principle as Mr. Negley's, it being quite immaterial to which end the screw bolt for tightening is attached.

Soiling Cattle.

To the average farmer of America, no system of the summer feeding of cattle offers so great advantages as pasturing on broad acres; yet there is a very large number to whom soiling (feeding in the stable throughout the entire summer) seems to afford the best means for profitably carrying on their business. There are many, also, with whom farming is only an incidental occupation, who keep two or three cows on small places adjoining their village or town residences, and whose regular avocation is in some other department of industry; these will find great advantage in adopting soiling. It is always important to keep the largest possible amount of stock on a given area. The extent to which the proportion of cattle to land may be increased is entirely dependent on the value of land, the value of the animal product, and the price of labor. The extent to which it is possible that it should be forced is sometimes astonishing. Instances are reported, in accounts of Flemish agriculture, in which seven large-sized milch cows are kept throughout the summer season on the produce of a single acre. This is enormous; but, while the allowance in the case of good land is one cow to two acres of pasture, it is easy, on land of the same quality, to keep two cows from the produce of one acre, the whole being cut and fed from the manger. The advantage of stimulating the production of our land up to this latter point is, under all suitable circumstances, very great; and many of the small farmers of the more thickly settled portions of the country would find it much to their advantage to so organize their entire establishments, as to depend wholly upon soiling for the source of their summer feed. Those who are not familiar with the practice and results of soiling raise many objections against its adoption,—such as, that cattle, deprived of the exercise that pasturing gives them, must fall off in health, and that the production of milk will be less. It is too late in the history of agriculture for such objections to have weight, for it has been amply demonstrated by repeated experiments in this country, as well as by long-continued practice in many districts of Europe, that not only is the production of milk greater under the soiling than under the pasturing system, but that the animals are evidently more comfortable and thrifty, are less liable to disease, and very much less subject to the annoying attacks of certain insects.

To abandon entirely the system of pasturing, and to adopt soiling in its stead, involves almost a revolution of the operations of the farm. Interior fences may be dispensed with, fields thrown into better shape, weedy headlands and the frequent turning of plow teams avoided, and produce obtained more cheaply and much more certainly. The amount of manure produced is enormously increased, and its quality is very much improved, enabling the farmer to raise more grain and roots for feeding and for sale. But, at the same time, more labor is required, and also greater system in the management of the operations of the establishment.

The increased amount of labor is due, not so much directly to the necessity for raising soiling crops, and for cutting them, and feeding them out, as to the requirements of the larger area of land devoted to other crops, and the larger amount of its produce. In all cases where it is possible to procure and to feed an additional number of men, any system that will allow of their profitable employment must be advantageous. The labor chargeable directly to soiling, which may be set down as the constant work of one man, and the occasional work of a team for every twenty cows, is more than paid for by the increased production of manure alone, to say nothing of the important advantages of a larger yield of milk, and the better condition of the herd; while, of course, the work expended in cultivating more and richer acres, devoted to the raising of crops for market, or for winter feeding, cannot fail to be profitable.

It would be impossible, within the limits of a single article, to discuss in full the manner in which soiling should be carried on. It involves many items, any one of which requires more than passing notice; and it will be sufficient to say here that we are convinced, both from our own experience and that of others, that a farm of fifty acres of such land as is considered in New England to be of first quality, (land which, with good manure, good care, and a good season, will produce seventy-five bushels of shelled corn per acre) may be made to produce the entire summer and winter food, grain and hay included, of fifty amply fed cows. Not that any land could be made to do this during this year or the next, but that in a comparatively few years, by forcing production to the highest point, the consumption of all produce on the farm, frequent plowing and cultivation, and the best management, it might be raised to such a state of fertility, that it would do it. This would imply the devotion of twenty-five acres to the production of summer forage, and twenty-five more to the production of hay, grain, corn-stalks, and large crops of roots for winter feeding; and it would require all the land to be in sufficiently good condition to produce four tons of hay per acre in two cuttings, which, although an unusual, in fact an almost unknown yield in this country, is by no means impossible. *

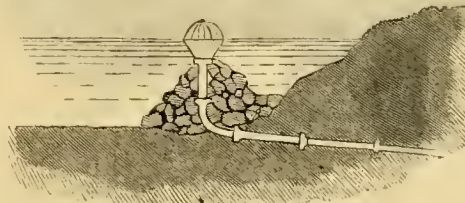
Outlets for Duck Ponds.

It is often desirable, where a small pond receives occasional floods of drainage water, to carry away the excess through an underdrain. Indeed, unless the pond is part of a brook that it is worth while to preserve, it is always best to remove its overflow under the surface, in order to avoid the unpleasant gully that usually follows the neglect of this precaution.

The plan shown in the engraving is for the removal of overflow water through a standing pipe in the middle of the pond, or at least

some distance back from its edges. This pipe may be made of wood or brick, or, still better, of large drain pipes, standing on end. The mouth of the pipe should reach exactly the desired level of the pond, at ordinary stages of water, and its summit should be covered with a dome of network, which may be made of galvanized iron, or copper wire, or even a cap of perforated boards will answer to prevent the entrance of sticks, leaves, and other rubbish, that might obstruct the drain. The bottom of the standing pipe should terminate in a curved pipe or trough, leading directly to the underdrain; and all of the joints below the surface of the water should be secured with hydraulic cement, or, what is quite as well for those under ground, with a covering of puddled clay. A sectional drawing of the pond is given, showing how the pipe and drain are constructed.

This plan offers the best means for admitting accumulated surface water into underdrains. The depth of water in the pond should be sufficient to quiet the flow received from higher ground, and thus cause a deposit of its silty contents, which it might be injurious to admit into the drain; and it will be

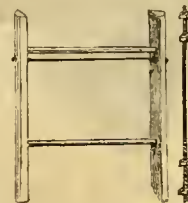


OUTLET TO A POND.

a good plan to supply the standing pipe with a gated opening, near the bottom of the pond, by which, in summer, the accumulated water may be drawn off, so that the silt can be cleared out, giving the pond its full capacity for another season's use. Care should be taken, in this case, to prevent the entrance into the pipe of the mud at the bottom of the pond.

How to Make a Ladder.

In the January number we gave an article on ladders, and this elicited from "J. F." the description of his way of making them, which, though it requires some little blacksmith work, is in some particulars superior to the way before described. He writes: "I take a young chestnut,—other wood may answer, but I prefer the chestnut. When dry it is stiff, and light, too. For a thirty-foot ladder, I take a pole six inches thick, and work it down to five inches at the but, and three at the top. Then I strike a line on the side, and lay off the holes twelve inches apart for the rounds, and bore them. This makes the step twelve inches, which is high enough for carrying any thing up or down the ladder. Then strike another line on the next side, and with a saw rip the pole in two, and a little dressing up will make it ready for the rounds. I take for rounds good white oak wood; split and shave them out eight-sided, a little heavier than they are wanted for the holes, so as to form a shoulder at each end. I prefer them eight-sided to round, as one is not so apt to slip on them. Then I have three half-inch iron rods made, one for the middle, and one for each end, longer than the width of the ladder,



LADDER BRACE.

with threads cut for two nuts at each end, one to go on the inside, the other on the outside of the ladder poles; these can be screwed up just as tight as is necessary, and you have a permanent ladder, without any broad or flat rounds."

Gypsum or Plaster as Manure.

A young farmer at Hastings, Mich., asks us to tell him in what way plaster benefits crops, its chemical effects, etc. He must excuse us. It is one of the most difficult questions in agricultural chemistry. The general idea is that the plaster attracts ammonia from the atmosphere. But this explanation does not meet all the facts of the case. Plaster has a more marked effect on clover and peas than on any other crop, and yet ammonia, when applied to these crops, has far less effect than it has on wheat, while plaster often fails to benefit wheat. Besides, it is doubtful whether plaster, in a dry or moist state, has such an attraction for ammonia as is usually ascribed to it. In solution, it will decompose carbonate of ammonia, forming carbonate of lime and sulphate of ammonia, but in the dry or merely moist state, it does not have this effect; or at least we have never been able to ascertain the fact, while it is well known that when carbonate of lime and sulphate of ammonia are mixed together in the moist state, carbonate of ammonia is given off. And, in fact, we once mixed some wet guano with ordinary plaster, and it drove off some of the ammonia. This effect was due, of course, to the carbonate of lime in the plaster; but it at any rate shows that plaster has not a very powerful attraction for carbonate of ammonia, or it would not have escaped from the mixture. But whether we can or cannot explain why plaster acts beneficially on some plants, the fact is well established. On nearly all dry, upland soils, it generally causes an increased growth of clover, more especially of the stalk. In our experience, too, it increases the growth of peas, or at least of the vines. It also frequently increases the growth of corn, especially of the stalks. And occasionally it acts very beneficially on potatoes. On low or wet land it is seldom of any use. But on dry upland, it is sometimes useful on all plants, and nearly always on those we have named. Mr. Geddes informs us that Onondago Co. farmers frequently sow plaster on barley with very good effect. Personally, we have not tried it on this crop, but propose to do so.

In regard to the time and manner of sowing, the practice is different in different sections. On clover it is usually sown early in the spring, although many farmers think it better to wait until the plants are a few inches high, contending that the effect of the plaster is on the leaves, rather than on the roots. On corn and potatoes it is usual to scatter about a teaspoonful on the plants in the hill before the first hoeing. But since the general introduction of plaster sowing machines, the plaster is sown broadcast on the fields, either before the corn is planted, or after it is up. The quantity sown varies from one bushel (90 lbs.) to three or four bushels per acre. When corn is planted three and a half feet apart, a teaspoonful on each hill would give about 200 lbs. per acre.

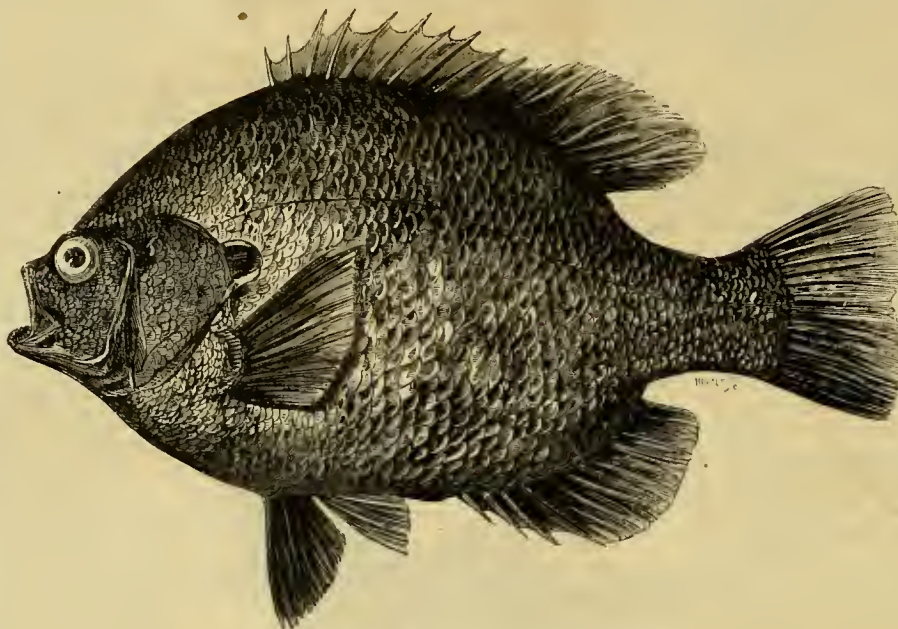
As to whether plaster is more beneficial on sandy than on clayey land, and whether it ever proves injurious, we never heard of its doing any harm on any soil, except that it sometimes produces rust in wheat. On dry, clay land, it is often as beneficial as on sandy soil.

The Pond-fish and Ruddy Bass.

The beautiful Pond-fish is so common that almost every country boy knows it as an old, familiar friend. Who has not thrown crumbs to the "Sunfish" or "Pumpkin seeds," from the bridge or bank, watched their graceful motions, and caught the reflections from their golden sides? Who has not taken them from the hook, pricked himself with their spiny fins, strung them on the white-birch twig, and wondered at the marvelous blending of red and olive, green and gold, on their broad, glistening sides? Our engraving, from the photograph of a specimen 8 $\frac{1}{2}$ inches long, gives a perfect idea of the side outline; viewed from above, the fish is long and narrow. Its colors are very brilliant, greenish olive upon the back, becoming lighter upon the sides, where irregular small red and broader yellowish-brown spots occur. The opercles, or sides of the head, and gill covers, are bluish, with light spots, and on the end of the opercle near the pectoral fin is a large, soft prolongation of it of brilliant colors; it is black, edged with intense scarlet. This fish is of little value as food, because it is generally so small and bony. Yet, whatever the size, it is eaten with relish, fried and well browned. The larger specimens are frequently found in market and are much esteemed. The Pondfish abounds in all parts of the country north of the Carolinas and east of the Mississippi, probably exceeding these limits, and is one of the most attractive fish gentlemen can have in their ornamental ponds and brooks. It makes a nest in clear, shallow water, near shore, excavating the gravel 4 to 6 inches deep in the middle, for a space 2 feet in diameter. Here it lays its eggs and watches them day and night for weeks, fighting off intruders.

THE RUDDY BASS OR WHITE PERCH.—*(Labrax rufus.)*—Under the name of White Perch two quite distinct fish are popularly known. They vary, however, considerably in size and in other points. The one, an engraving of which, about half the natural size, we present, is the larger and better fish, as it frequently exceeds 9 or 10 inches in length. The color is bluish above with a pale reddish hue extending over the sides, changing to pale orange on the belly. The head has metallic reflections, and the pectoral and ventral fins are reddish. This is a common fish in those streams and waters which communicate directly with the sea along the

Atlantic coast, and where the water is brackish, and, at least occasionally, salt. It is, we believe, never found at a distance from brackish water. Though clearly a bass, its general form associates it with the perch, and hence the common name. It is taken abundantly in the vicinity of New York and found in the markets during the winter and spring, and is esteemed as a pau fish.



THE POND-FISH OR SUNFISH—(*Pomotis vulgaris.*)

Green Fodder for Dry Weather.

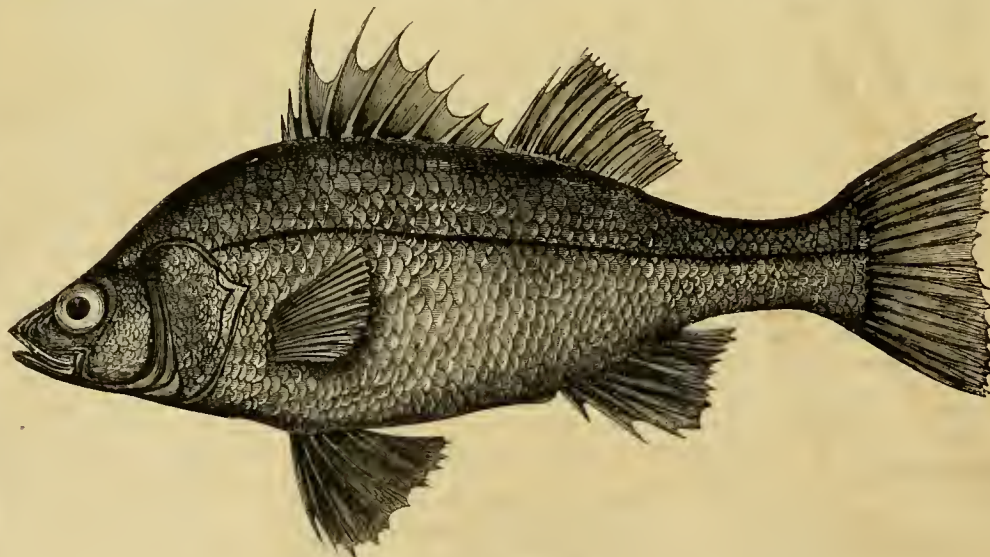
On a large number of farms which have connected with them mountain lands, outlying pastures, or any fields to which labor cannot be profitably applied, the only economical way to make use of a very large amount of valuable food is to feed it off by pasturing animals; but unless the amount of pasture land is so great in proportion to the number of animals to be kept, that, during the season of luxuriant growth, more food is produced than can be

every farmer whose pastures are liable to become pinched under the heat of the August sun should sow early in the season, and at successive intervals of two or three weeks, until the first of July, such a breadth of some large-growing variety of corn as will ensure the needed supply to keep his stock always amply fed.

On well-arranged dairy farms, where animals are pastured sufficiently near to the buildings to be driven in at night, it will be well to give a good feed of cut fodder every evening, and in some cases in the morning as well, turning out to pasture during the day. Indeed, so universal is this practice becoming in our best dairy districts, that it is hardly necessary to say a word in favor of its adoption. If Indian corn alone is depended on for this purpose, the seed should be procured from a more Southern locality, as such corn is more luxuriant in its growth of stalk and leaf than is that of any Northern region. Some good farmers in New England procure seed corn for soiling use from Missouri, and believe that the production

of fodder from it is nearly twice as great as would be that of any variety of which the seed could be perfectly ripened in their locality. Sweet corn is more valuable, weight for weight, than any other, but the seed is so expensive and so uncertain in its germination, while the amount of stalk and leaf produced is less, that the profit of using it for soiling purposes is questionable. Hungarian millet and other plants seem to be excellent for soiling purposes; but they are much less known, and it is by no means safe, as yet, to recommend them as bet-

ter than our native Indian corn, with the cultivation and care of which all are familiar. In the system of partial soiling, valuable assistance may also be obtained from the use of winter rye, which makes a luxuriant growth very early in the spring, long before grass is fit for feeding, and which may be cut in its early stages of growth without detriment to its production of grain; though, after the production of the seed stalk has commenced, cutting is injurious. Even after this time, however, a



RUDDY BASS OR WHITE PERCH—(*Labrax rufus.*)

consumed, it will always be profitable to raise a greater or less breadth of some succulent green crop, with which to eke out the precarious subsistence afforded by parched pasture fields.

Throughout the whole region where Indian corn grows, this affords the most abundant and cheapest green fodder for use during the later months of summer and the autumn. And

valuable amount of green forage will be produced for use later in the season.

THE FIRST MILK of a cow after calving is purgative, and might have a bad effect on hogs, but we should think it could not be dangerous unless fed regularly day after day. It is used as human food in Europe without evil effects

Buds out of Place.

The books tell us that one of the distinguishing characters of the root is, that it never bears buds. This is true of the great majority of roots in their normal condition, but, under certain circumstances, roots will produce buds; and not only is this the case, but they may be made to produce them with such certainty, that propagation by root cuttings is one of the most ready methods of increasing many plants. We showed not long ago that buds were readily formed upon the scales of the lily bulbs, which are only modified leaves, and in the Begonias and many other plants, a leaf proper, or a part of a leaf even, may be made to produce buds so readily, that leaf propagation is not an uncommon thing with florists. Mr. A. S. Fuller has made many experiments with these unusual methods of propagation, and has largely extended the list of those plants which may be multiplied by root cuttings, etc. He recently brought us a remarkable and interesting instance of the unusual appearance of buds in the gladiolus. Mr. F. W. Woodard had placed some bulbs of Gladiolus under the stage of his green-house. Several of the bulbs were turned upside down, so that the terminal bud, which



GLADIOLUS BULB.

naturally would have started, was removed from the light, and probably had less heat than the bottom of the bulb. The temperature being sufficient to start vegetation, and the natural growth being checked by these causes, buds appeared, and leaves developed in a very unusual

place—the bottom of the bulb. The engraving given below shows the appearance of one of the bulbs, it being represented upside down, of course. The unusual growth is shown, and also the regular shoot, which at length had started and curved itself towards the light.

ROSE AND WHITE HYDRANGEA.—(*Hydrangea Japonica*, var. *rosea alba*.)

The Hydrangeas.

The well-known Hydrangea is, in the Northern States, generally kept under shelter in winter, and turned out in spring. Its enormous balls of usually pink flowers have long made it a favorite plant, but its claims to popularity are likely to be contested by more recently introduced species and varieties, a number of which have come to us from Japan. In April of last year we figured the Large-flowered Panicked Hydrangea, which produces immense flower masses, a foot and a half long. Under the names of *Hydrangea Otaska* and *H. Imperatrice Eugénie*, the French journals have recently given us engravings of some fine forms. Messrs. Olm Brothers, of Springfield, Mass., send us, under the name of Rose and White Hydrangea, *H. rosea alba*, a charming plant. We give an engraving of a flower cluster reduced in size. The centre of the cluster is occupied by small, perfect flowers, while on the circumference there is a row of larger sterile flowers, which are pure white when they first open, then become beautifully tinted with rose, and finally of a deep red. The colors are very clear and pure, and the effect remarkably fine. In the common Hydrangea the whole cluster is made up of these large, sterile flowers. We take the present plant to be a variety of what is called *Hydrangea Japonica*, which is believed to be only the normal form of the old Garden Hydrangea, which this plant is quite like in foliage and habit.

Lima Beans.

There are probably hundreds of our readers who have gardens and do not raise Lima Beans—at least our observation shows that they are not so generally cultivated as they should be. The Lima is the very perfection of beans, whether taken in its green state or ripe. Any one who has an ordinarily good soil can grow them, if he observes the precaution not to plant too early. Make hills by spading in some

good compost or well-rotted manure, four feet apart each way. Set a pole firmly in the center of each. The pole need not be more than six or eight feet out of the ground. Some recommend twelve, which is a mistake. It is the disposition of climbing plants to get to the top of their support before they begin to bear, and long poles bring late crops. It has been said that good crops can be had without any poles. We have never tried this, but propose to do it this season. Put five or six beans around each pole, pressing them into the soil with the eye downward, and covering about an inch. Early in June, when the cold storms are over, is usually soon enough. When well up, thin to four plants to each pole; and when they first run, if they are dis-

posed to wander, give them a turn about the poles. Keep the ground clean, and pinch in the longer side branches, as well as the top of the vine when it has surmounted the pole.

The Safflower, or "Saffron."

There seems to be just now a marked disposition to experiment with those plants which furnish economical products, and we have many letters asking about madder, opium, and other

SAFFLOWER.—(*Carthamus tinctorius*.)

things not used as food. While we are glad to see a desire to cultivate every product that our climate will allow of, we would caution against undertaking any untried culture without first carefully experimenting. Some one wrote us to send poppy seeds enough to plant an acre.

What an elephant would an acre of poppies be to any one, while a square rod or less would be ample for all purposes of experiment! There are many things that will grow with us which cannot be made paying crops on account of the cost of collecting them. Safflower is one of the plants about which inquiries are made. In this country it is improperly called saffron, which is the product of a crocus, while the safflower, or American saffron, is from the *Carthamus tinctorius*, a plant related to the Thistles. The plant is a native of the East, and is more or less cultivated in our gardens. It is an annual, growing from six inches to a foot or more high, and bears numerous heads of orange-colored flowers of the shape shown in the engraving. The leaves, as well as the scales of the involucre which surrounds the head of florets, have small, spiny teeth. The valuable portion is the small flowers or florets, which are plucked when in full bloom. In the East Indies, where the principal commercial supply is grown, the flowers are pressed into small cakes; the small quantity produced in this country is dried loose. More or less saffron is used in domestic medicine, and is probably as harmless as any of the many things given as warm drinks. Its virtues depend largely upon the amount of warm water given with it. It is used to adulterate the true saffron, which is an expensive drug, to make rouge and "pink saucers," and as a dye. It gives a brilliant red to silks, which is not a fast color. In Europe, the plant is frequently grown as an ornament in gardens. As with most of the oriental commercial products, it is difficult to find any details of the cultivation of safflower, or statistics with regard to its yield, etc. Those who wish to experiment with it should sow the seeds early this month; a foot apart would probably be a proper distance, and the rows far enough apart to allow of the necessary cultivation and gathering the flowers.

More Mole Traps.

The number of washing-machines and cooking-stoves patented each year indicates that perfection in these articles is not yet attained. We judge that this must be the case with mole traps, as each year brings us several new contrivances for destroying the burrowing pests. If mortality to the moles were at all in proportion to the ingenuity expended in exterminating them, the race would have been extinct long ago. We imagine that one thing is needed which the inventors cannot supply—care and

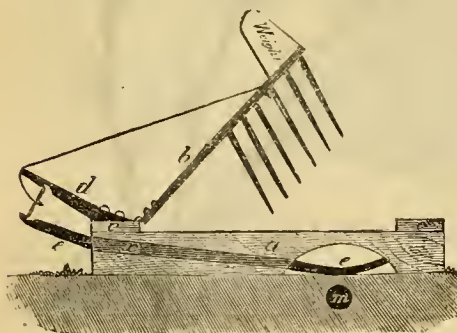


FIG. 1.—EX-SQUIRE'S MOLE TRAP.

persistence in using the traps wherever a mole-track is noticed. "Ex-squire," who dates from the odd place "Six Acres not Enough," in New Jersey, where "Ten Acres Enough" was discovered, sends his "con-trap-tion," of which he says: "'Tis death on the moles, and not being patented, is public property. It is made of strips of one-inch boards; there are two pieces

like *a* joined by two pieces, *c, c*, nailed on; *b* is hinged to one *c*; *d*, over which the cord runs, is nailed to *c*; *e* is on a pivot at *x*. The spikes are pieces of wire, ground to a blunt point. I make *c c* about eight inches long." Figure 1 shows an end view of the trap placed over a run.

Mr. Geo. Foland, Hagerstown, Md., (?) gives a drawing of his trap, which he thinks more simple and effective than any we have heretofore published. He says: "It is only a common dead fall, which any boy knows how to make. A board ten or twelve inches wide, and from four to six feet long, with a stone upon it for a weight, is used with the common trip trigger. Take a block nine inches long by three

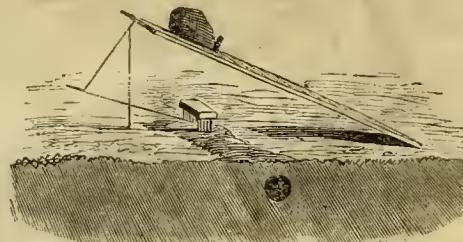


Fig. 2.—FOLAND'S MOLE TRAP.

inches wide, and one and a half inch thick; strike a circle on each end, of two and a half inches diameter, and put in each circle four sharp nails, extending through the block about four inches. Place your foot upon the trail, and press it tightly down, and put the block upon the trail, with the nails on each side of the part pressed down. The point of the trigger must bear upon the part thus pressed down, as represented in the engraving. As the mole opens his trail, the trigger is raised, which drops the weight upon the block, and drives home the nails. This trap never fails to catch."

Notes from "The Pines."

Mr. Walks and Talks has given his experience in the paper, and why should not I? He has a large farm to walk and talk over, and I propose to do the same with my large garden. Now, it is very jolly to go upon a new place and find it all just as you would not have it. A place that is finished is a terrible thing to have—but one that has been begun, and has everything wrong from beginning to end is a perfect treasure. I have not time to make a map of the place as it is, but you may imagine a long and narrow piece fronting on the river, and going back over hill and dale indefinitely, and including about ten acres. "Why do I call it 'The Pines'?" "Because I could not help it." You see, that there are on the river bank three pine trees, our beautiful native White Pine, the Weymouth Pine of England, which for height and spread of limbs are rarely to be equaled; and out of respect to these grand old monarchs, the place is called "The Pines." Beyond this natural growth the trees are all wrong, as is every thing else. Two Balsam Firs, the worst of our evergreens, flank the front door, and shrubs put in a straight line with them give a very cheerful idea of a funeral. There is a row of cherry trees near the front line fence, which ought to bear fruit, but don't; and all the grounds around the house which will be lawn, are occupied by pear trees, currant bushes, quince trees, and as near the road as possible is a bed of asparagus, and another of rhubarb! I can't tell you of the odd things that are where they ought not to be, but some time I will make a plan and show how they are, and how I have changed them, as the suggestions will be useful to hundreds of readers. Now, next to making a place useful to

one's self, it is important to make it useful to others. I intend, in the "Notes from 'The Pines,'" to record my failures as well as my successes, and to make them as talky, if not as "walky," as Professor Harris does in his generally appreciated Walks and Talks. My great satisfaction in the whole is, that we have what the *Agriculturist* has long wanted—a big garden. The different editors have four large farms, and I supplement them with a large garden, in which there will be ample room to test all the many things our friends send us every year. Already Saul, of Washington, D. C., Lum, of Sandusky, O., Carpenter, of Rye, N. Y., Fuller, of Woodside, N. J., Geo. Such, of South Amboy, N. J., Col. Wilder, of Mass., and J. J. A. Gregory, of the same State, Bresee, of potato fame, Conover, who will be famous in potatoes, Mr. Vanderveer, whose seedling is working its way into popularity, and many others whom we cannot name here, have sent us things to be tested. I intend to make "The Pines" a trial ground, as there is ample room to test every garden product. Taking possession late in April, I can only make the tillable land do its best. Many kinds of potatoes have been put in side by side in purely field culture, and some impartial and interesting results may be looked for. Many "novelties" in the way of garden vegetables and flowers have been sown, and odd seeds from various sources put in, so that there is already material enough at hand to make the "Notes from 'The Pines'" interesting to every one who has a garden, large or small.

The Cedar of Lebanon.

BY A. B. ALLEN.

In a late rapid jaunt over Great Britain and parts of the Continent, I took some pains to visit a few of the famous trees flourishing there. Of the evergreens the Cedar of Lebanon was the grandest and most noble. It is to this class what the white oak is to deciduous trees; and it affords me much pleasure to learn that its cultivation is considerably on the increase now among us. The largest Cedar of Lebanon I know in the United States is to be seen in an open field, formerly a part of the Bloodgood nursery, in the town of Flushing, about ten miles from the office of the *American Agriculturist*. About three years ago it was struck by lightning, and several feet of the top were cut off, but it still towers upward of sixty feet high. The circumference of its trunk, close to the ground, is within a fraction of thirteen feet; three feet above, eleven feet; six feet above, nine feet. The lowest branches commence seven feet from the ground, and have a spread of about forty feet. They are all horizontal, very close to each other in whorls, and gradually diminish in length to the top of the tree, thus forming a symmetrical cone. The foliage is very dense, and of the deepest, purest, and most vivid green, at all seasons of the year. When the sun falls upon this bright, fresh, verdant mass, it lends a golden tinge to its foliage, as beautiful as that of the celebrated Abies (*Picea*) Nordmanniana. It is not to be wondered at that the Cedars of Lebanon of old were called "glorious," and were said to be "planted in the garden of God."

The soil where this tree stands is a light sandy loam, of moderate fertility. Its growth, therefore, has been slow, giving its wood a good opportunity of ripening well every season before the severity of winter set in; and this is one reason, undoubtedly, why its foliage is such a bright, fresh green all winter. I have watched

this noble tree pretty attentively for several years, and the only time its leaves were found to be tinged by the frost was in January and February, 1868; then the tip ends of many of the branches were changed to a russet color, or rusty brown, which soon wore off, however, as the spring advanced. It is well known that that was the severest and most trying winter for evergreens which we have experienced for many years. The past December, also, was unusually cold, but it did no injury to the foliage of the Cedars of Lebanon in Flushing, there being several others of considerable size there, in addition to the one described above.

A cold, moist soil is injurious to this tree, and it should be grown standing clear of all others. I could but remark the great difference in size and superiority in general appearance of the specimens at Warwick Castle Park, and other places in England, standing by themselves, to those which grew up more closely surrounded by other trees in the Jardin des Plantes, at Paris.

The Wanton Destruction of Timber.

BY M. L. CURTIS, CLYDE, OHIO.

If there is one subject upon which it seems impossible for farmers to properly reason, it is the importance of saving what little remains to us of our forests. Ohio to-day has one mile of railroad for every ten sections of land, with thousands of locomotives and tens of thousands of cars, and shops, depots, docks, bridges, tanks, ties, sheds, and shanties, without number. The shrill scream of the locomotive's whistle reverberating through every forest proclaims its doom. And Ohio is only a sample of other timbered States. In addition to their own wants are the long, lank arms of the timberless regions of the West stretched out for supplies. Then in addition to this are the hucksters, hawkers, and runners, that swarm through the land in search of ship timber, car timber, cabinet timber, pipe, butt, oil, and barrel staves, spokes, bent work, hubs, ax-helves, hoop-poles, ear-blades, hand-spikes, ship-knees, fork and rake staves, hoe-handles, ball clubs, police staves, and walking canes, to be sent far and wide. Besides this the demand for timber to build steamers, sail and other vessels, docks, and elevators for our vast inland waters as well as for the seaports, and the requirements to build our cities, villages, hamlets, and farm-buildings; to bridge our streams, fence our fields, and warm our dwellings, and the thousand other unnamed uses to which timber is daily applied, gives but a faint view of the demands for to-day. But who shall compute the demand of to-morrow? Every cough from the locomotive's hoarse lungs augments it. Still, in the face of all this, farmers all over our land who are not pinched for timber will argue, "Why let the timber cumber the ground, which, if cleared, would net \$5 to \$10 profit per acre a year? This at interest would more than buy our timber for all purposes." And so farmers with scanty wood lots are clearing acre after acre, and who shall arrest it? The skillful chopper in one hour demolishes the majestic oak that has required the heavenly benedictions of sunshine and showers for three centuries to grow it. Two years ago an old pioneer living in the interior of Ohio told me that could he have the timber back on his 200-acre farm that nearly killed him and his wife in getting it off, it would sell for \$300 per acre, standing. And it was true. I told this to one of my neighbors who was about to clear off his last timber on the plea that the use of the land would be

more profitable to him than to save the timber. But I might as well have told it to one of his trees, for his men are now cutting the last acre. The time has come when the growing of timber throughout the prairie and older settled States should be encouraged, and entered upon in earnest. The writer, in a few experiments in growing timber where he now resides, has obtained the following results: Cotton-wood, 13 years' growth, 60 feet high, and 18 inches in diameter 2 feet above ground; Sycamore (Button-wood) about the same diameter, but not so tall; one sample Yellow Willow showed the enormous growth of the annual rings of over 2 inches in width; Locust of 20 years' growth attained a diameter of 12 to 15 inches, tall and symmetrical, and it is a hardy, durable, and valuable kind of timber. Some samples of Butternut, Black Walnut, and Yellow Oak, left standing in the fields, show about the same dimensions. Much of the reserved timber is prematurely dying, which the owners would gladly prevent if they knew the causes. Some of the causes are underbrushing and pasturing. For it is a fact beyond controversy that our primitive forest trees die in a short time after the ground under them becomes turfed over and hardened by the tread of stock. And it is better economy to pelt the sheep and shoot the cattle rather than to continue the practice.

Another active agent in the destruction of timber is ditching. Timber grown on wet land is very sensitive to the spade. Ditch around the woods rather than through them, if possible. Some argue that stone coal is preferable to wood for fuel. Let those who wish to breathe carbonic acid and the fumes of sulphur, and have their bodies begrimed with smut, their rooms blackened, and the rain dropping from their eaves like ink, accept the coal. The intrinsic value of timber, the relative value of the different kinds, the near day in the future that will see our pine and other forests exhausted with the accumulating agencies of destruction now at work, the thermal modifications the forests exert upon the soil and atmosphere, the certainty that the removal of the forests would repeat here what it has done elsewhere, in turning our beautiful and productive country into a barren waste, are matters of great moment, and should come home to every lover of his country.

Training Raspberries.

In growing raspberries on the large scale, a stake is used to support the canes; but in garden culture, not only is greater neatness secured, but the new canes which are to bear



Fig. 1.—HOOP TRAINING.

fruit the next year have a better opportunity to develop, if some kind of a trellis is used. One of the simplest supports is the hoop trellis, (fig. 1) given by Mr. Fuller in his Small Fruit Culturist. It is made by driving a stake each side of a stool, and nailing a barrel hoop to them. The canes are to be trained to the hoop, and fastened, to prevent them from blowing about. Another method of training is shown in fig. 2, in which two stakes are driven, one on each side of the plant; the bearing canes are bent

over and tied to the stakes, while the new ones grow up in the centre. An improvement on this is to use a wire trellis, which allows both the bearing and the new canes to be supported. Mr. W. R. Davis, Crawford Co., O., sends us his method, which has some features different



Fig. 2.—TRAINING TO STAKES.

from any other plan we have seen. He puts strongly braced posts, which project 2½ feet out of the ground, at the ends of the rows, and other stakes at every fourth plant. A No. 12 galvanized wire is stretched between the end posts, and fastened at the top of the intermediate stakes by means of a small staple, driven over the wire. Supposing this to be put up at the time the roots are planted, the new canes, of which four are allowed to grow, are tied to the wire when high enough. The second year two canes from each stool are bent over, and

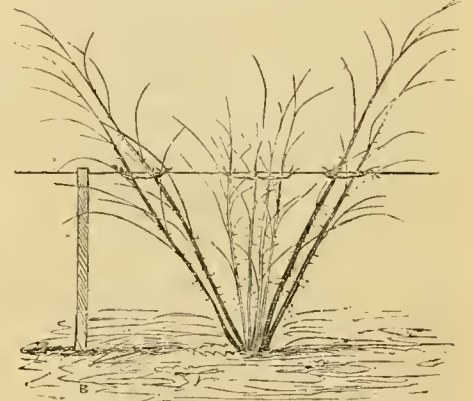


Fig. 3.—TRAINING TO A WIRE.

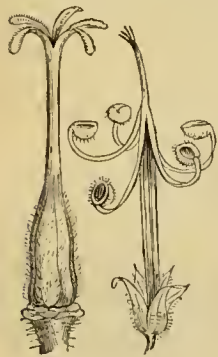
tied to the wire, as shown in fig. 3, while the new canes grow up straight, and are secured to the wire. After the fruiting canes are removed, the new canes are bent over in their place. From the number of inquiries that are made, we infer that it is not generally understood that raspberry canes bear fruit but once. After the fruit is off, they are to be removed, and the new growth trained up to supply their places.

CURRENTS.—The old Red Dutch, well manured and mulched, will give as large fruit as the Versailles and other large kinds will, if neglected. Mulch the bushes with whatever litter is at hand, and apply powdered hellebore at the first appearance of the worm. A correspondent at La Porte, Ind., writes that he has obtained remarkable results from the use of leached ashes.

SCALE LICE.—The eggs of the Oyster-shell Bark louse hatch this month, and the young brood of very minute lice make their way to the tender, new shoots, where they fix themselves. They soon become covered with an impermeable shield, and can only be destroyed before they are thus protected. Watch them carefully, and at the hatching time apply strong soapsuds.

Geraniums and Pelargoniums.

The name Geranium is so generally associated with green-house and window plants, that but few are aware we have several wild Geraniums, and that those exotics which are commonly called Geraniums are, botanically speaking, not Geraniums at all. The most common, as well as the largest, of our native species is *Geranium maculatum*, the Common Cranesbill, the one shown in the engraving. It is a branching perennial herb, about two feet high, with rather coarse and cut leaves, which, when old, show whitish blotches. The regular, light purple flowers are about an inch across, and are followed by a long beaked fruit, which gave rise to the popular name of Cranesbill, as well as the scientific one, *Geranium*, which is derived from the Greek word for crane; the specific name signifies spotted, in reference to the markings upon the leaves. This beaked fruit is interesting as illustrating one of the many methods in which seeds are scattered. The fruit consists of five pistils, which are attached to a stem-like projection or receptacle. When the fruit is ripe, the lower portions of these pistils, which contain the seed, suddenly break away, and by the curling of their upper portion, throw out the seed. The small engravings given below show the closed and open fruit. The root of this species is very astringent, and is used by physicians and in popular medicine. The Carolina Geranium (*G. Carolinum*), is not rare in barren soils; it has more finely divided foliage, and much smaller flowers. The Herb Robert (*G. Robertianum*), which grows in shady and rocky places, is still more delicate in appearance, and has a strong and unpleasant odor. Some of the foreign species are now and then found in gardens; of these, the Lancaster Geranium (*G. Lancastriense*), is a very pleasing one, it being a perfectly hardy, low growing plant, and is covered with flowers much like those of our common Cranesbill nearly all summer. The green-house plants commonly called Geraniums are Pelargoniums; they are all tender shrubs,



GERANIUM FRUIT.

or have thick, fleshy stems, and their flowers are irregular, having two of the petals differing somewhat in size and shape from the others. At the base of the flower there is a sort of projection or spur from the calyx, and all of the stamens are not perfect, only seven of them usually bearing anthers. A great deal of fine writing and bad temper have of late been displayed by florists in the discussion as to what are Geraniums, and what Pelargoniums. Botanically, there is no doubt of the difference between the two, and we have given characters sufficient to distinguish them. The name Geranium has become so thoroughly attached to the green-house plants, that it is convenient to continue its use as a popular name for the Pelargoniums. But when florists, as some do, tell

us that a part of the Pelargoniums must be called Geraniums, and the other Pelargoniums, we quite fail to see the force of their claims.

THE CHINESE YAM.—Recently attempts have been made to resuscitate this "novelty."



COMMON CRANESBILL.—(*Geranium maculatum*.)

The whole story is this: The Chinese Yam, *Dioscorea Batatas*, was introduced about fifteen years ago as a new and valuable esculent, and a substitute for the potato. It is a vine with a handsome foliage, and of vigorous growth. The root, which is the edible part, runs down from two to four feet, and is exceedingly brittle. It is difficult to dig, and when dug is acceptable merely as a variety. The labor of extracting the roots from the soil will prevent it from ever becoming popular, and though it has been before the public for so many years, and extravagantly advertised, it is only to be found in the gardens as a curiosity.

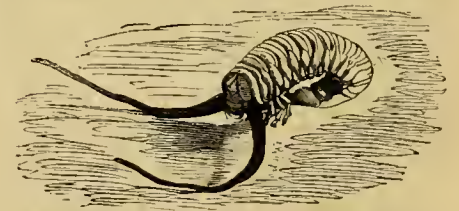
Plants Growing Upon Insects.

Many of the troublesome insects are kept in check by other insects. Besides the insects that are carnivorous in their perfect state, there are others, such as the Ichneumon flies, which deposit their eggs in the bodies of grubs or larvæ, and develop at the expense of the life of the individual within whose body they are placed. These parasitic insects are friends to the cultivator, and there are but few insects which are pests to us but have their troubles in the form of other insects that are pests to them. Besides being preyed upon by insect-parasites, there are also plant parasites which

are destructive to insects. It seems only fair that, as there are so many insects destructive to plants, there should be some plants fatal to insects. Those plants which are found as parasites upon insects and other animals belong to that immense order known as fungi. It is a

minute fungus that proves so destructive to the silk-worm, and flies and wasps are attacked by others; but these are minute forms of fungi, and appear only as a kind of mould. A much larger fungus attacks the white-grub, which is the larva of the common May-beetle, *Lachnosterna quercina*. Mr. G. W. Weatherby, Mooresville, Mo., sends us specimens of this grub, "some of which are alive and natural, and others have a kind of plant growing out of their heads; there are thousands of them in both stages in all of the new land." We give an engraving of one of these specimens, in which there are two of these growths, one from each corner of the mouth. In most cases, one of these is much longer than the other; in one specimen, both project from the same side of the mouth, and frequently there is only one, when it is longer and thicker than when two are present. The longest specimen (exclusive of the grub) measured two and a quarter inches. The grubs having these appendages were dead and much shrivelled, and as living ones were sent at the same time, we infer that they were found in this condition. The phenomenon has been noticed in the American Entomologist, and by Mr. C. V. Riley in his admirable report on the Insects of Missouri,—the same thing having occurred in Iowa, and in other parts of Missouri. The publications above cited give a letter from a Virginia gentleman, who states that it is well known in Virginia that a white mushroom, poisonous to hogs, is produced from the white-grub. Our specimens are all of a dull purplish color,

and whitish at the tip; the editors of the American Entomologist state that theirs were green, which is an unusual color for a fungus. No indications of organs of reproduction were observable, and without these it is not practicable to determine what the growth is. It is to be hoped that the development of this vegetable parasite will be watched, and perfect specimens procured. Did we know the conditions which produce this fungus, it might be made available in the destruction of the white



WHITE-GRUB WITH A FUNGUS.

grub. The larvæ of a moth, bearing a similar growth, are brought from New Zealand, and another is known in Chinese medicine under the name of *Hia Tsao Tom Tchom*. It consists of a grub about one and a half inch long, bearing a fungus of about the same length. This is said to be so costly, that it is used only in the family of the Emperor, where it is administered by the agreeable method of adding it to the stuffing of a duck, which is roasted and eaten.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

A Chip of the Old Block.

Nothing is more common than to hear children described by this homely phrase. They cannot help taking upon themselves the character of the homes in which they are nurtured. They have been involuntarily moulded by the influences which they have felt from their earliest hours. Many faults of temper and manners for which we blame them, they have received unconsciously from us, and we only see our own uncomfortable habits made flesh before our eyes, in the condition of those who have been constantly moulded by our example. It is not what we say, but what we are, that most powerfully affects the childhood in our homes.

The father dies out of an affectionate family, and the mother is left behind in bereavement and sorrow with her little flock of children. As she sits meditating upon her loss, she hears a step coming down the walk. The color rushes into her face, and then she becomes deathly pale and faint. Whose step was that? Is he coming home as usual from his work again? After all, were his sickness and death but a feverish dream? Was that his step? The door opens and her oldest son is in her arms! When was he taught to step like his father? Every time his father stepped before him. We are constantly influencing these susceptible young spirits while we are in their presence. Their faces do not bear more distinct marks of our countenances than their tempers do of our spirits. The smiles that pass like sunshine over our foreheads, and the clouds that sometimes veil them, are all imaged upon the souls of the children, just as the beams of midday and the floating vapors are reflected in the bosom of the sea. We bless them by our example more than we can by our counsels. Mothers preach less than fathers, but they influence young children far more. We should be ourselves what we would have them to be. Children are shrewd and close observers.

"Be still!" said a mother to her little son, who was playing just out of the door with his companions while his mother was entertaining company. The noise continued. "Be quiet!" again said the mother; but still the clatter went on. "I shall have to punish you if you do not obey me," said the mother once more, and without effect, to the child. "Aint you afraid she will whip you?" asked one of his companions, surprised at his boldness. "O, no!" returned the little philosopher, "she never whips me until she has spoken louder than that!"

When we find coarse, selfish, unmannerly, unkind children, we can but think the influences of home have been unwholesome. There may have been correct counsels and severe punishments, but the daily temper and habit of the household have not been genial. It is not the storm, the deluge of rain, the electric discharge, that has the most to do in bringing forward vegetable life, although these have their place; but it is the daily sunshine and the evening and morning dews that chiefly nourish and bring to perfection the summer fruits. Neither is it the harsh command, and the sharp, sudden retribution that follows wrong-doing, that has the most to do in giving direction to youthful character, but the daily example and genial tempers of the household. Let it be a compliment to child and parent to say, "he is a chip of the old block."

The Table—Order and Ornament

After every care has been given to neatness and order, and every dish upon the table has been made to look its best, we may then proceed to use ornament for its own sake, and for this purpose flowers are pre-eminent. The most costly vases of crystal or porcelain, and the most elaborately wrought center-piece or *epergne* of silver, are only most beautiful when they hold flowers, while, on the other hand, these dignify the most humble receptacle. Let us then have flowers upon the table,

—not the costly efforts of the florist, but such as the country gardens and the woodsides afford. In arranging flowers there is an opportunity for a display of skill and taste. The finest products of the garden may be huddled into a compact mass, looking much like a many-colored canflower, and be surpassed in beauty by a few wildlings from the woods. In flower arrangement it is necessary to have an abundant supply of green, and here is



Fig. 1.—TABLE ORNAMENT.

where most fail. A few bits of the lily of the valley put in a wine-glass are more attractive than many masses of flowers called bouquets. We have a large preponderance of green with the delicate white bells of the lily of the valley hanging with their natural grace. The idea of naturalness and grace should pervade all arrangements of flowers for table decoration. We know that the florists will demur at this, but we are writing for people who do not care for flower fashions. Let the rule be, but few colors and plenty of green. There should always, when practicable, be a plenty of white flowers, and a plenty of spray-like green, to give lightness to the bouquet. Asparagus green often comes in very cleverly for this. In arranging flowers in a vase, let them look as if they enjoyed being there, and not as if crowded in and held in duress. For something more elaborate than a vase bouquet, we have used with much satisfaction a plan suggested some years ago by one of the English journals. A stand is made, like that in fig. 2. It consists of two tin plates; the lower one, which should be larger in proportion than here shown, has a socket in the middle on the inside, and the upper one a similar socket on the under



Fig. 2.—STAND.

side. A solid rod or glass tube, which may be had of the druggists, serves as the standard, and fits into the sockets. The lower plate should be made of heavy tin or galvanized iron, in order to be sufficiently stiff. The two plates, which are painted green, are to be filled with wet sand, into which the stems of the flowers are stuck. Figure 1 gives an idea of the effect when finished. Many of our wild ferns may be used, but they should be dipped in water to prevent them from wilting. Light, drooping plants are best suited to the upper plate, and some delicate vine may twine around the glass rod. A stand of this kind filled with well-chosen green only would be beautiful, but when flowers are in-

duced, it is really elegant. Moss may be used in the plates instead of sand; it is lighter, but it is more trouble to insert the flowers in it.

Household Talks.

BY AUNT HATTIE.

BOTTLING FRUIT.—The question is often asked, "What kind of bottles do you use?"—I reply, any and all kinds, from a common long-necked bottle for green currants, gooseberries, and rhubarb, to pickle jars for strawberries and raspberries, up to the glass, wide-mouthed, self-sealing, patented fruit jars, which I reserve for plums, pears, and peaches, or any kind of fruit which it is desirable to preserve in an unbroken state. These narrow-mouthed bottles may be sealed very nicely and effectively in the following way: Procure some pieces of new cotton cloth large enough for the purpose; then melt together an ounce of mutton tallow and a pound of rosin; a little beeswax would be an improvement. Have it melted and mixed, and standing on the back of the stove, ready when you wish to use it. After the boiling fruit has been successfully introduced into the bottle, and while in this heated state, put in the cork, if you have one, or if not, a wooden plug will answer. Take one of the pieces of cloth and tie it with a stout string over the mouth of the bottle; then cover entirely, rim and all, with the warm rosin. It would be as well to put another cloth over this, and, perhaps, more rosin; it must be air-tight. If I were to get a fresh supply of bottles, I should choose a kind the lid of which would move or slip up if subjected to pressure from within, as would be the case if fermentation of the contents occurred. I never have had such an accident happen to me, but I have been assured that where lids are made to screw tightly on to the bottle and the fruit fermented, the bottle would burst before the lid would yield. Learners in the art would do well to confine their first efforts to bottles with corks, using wax to make them air-tight.

TO BOTTLE STRAWBERRIES.—Wash, stem, and weigh the fruit, and to every pound of fruit allow at least one quarter of a pound of the best white sugar; put into the preserving kettle a pint of water and a pound of the sugar; dissolve the sugar, and when the syrup boils, put in a quantity of strawberries,—say three or four pounds; let the kettle stand on the back of the stove until the fruit appears well heated through; then remove to the front, and when it boils briskly, bottle immediately. If quite juicy, leave some of the syrup in the kettle and add more sugar (not any water); put in more berries and proceed as before. Of course during this time the bottles will have been prepared by placing them in warm water, to prevent cracking when the boiling fruit is poured in.

PICKLED WALNUTS.—I have procured from an English lady a recipe for making walnut pickle. She informs me that butternuts will answer the purpose, but are not so nice as the English walnut. Gather the nuts just before the kernel commences to barden, prick them through and through several times with a coarse needle, put them into a crock, pour over them a rather strong brine, and allow them to remain for three or four days; drain and spread them in the sun until they are dry and have turned to a dark brown or nearly black. Put them now into a suitable jar, and pour over them boiling speed vinegar, using 2 ounces of mustard seed, a little mace, 2 ounces of allspice, and 2 ounces of whole black pepper, to one gallon of vinegar. A few onions may be added, if your taste will permit. This pickle may be used at any time after making, but is much better for being kept a year. After the pickles are used, the vinegar may be boiled and bottled for catsup, as it is excellent.

MOLASSES CAKE.—I have been making a kind of molasses candy gingerbread, which the children seem to appreciate, and in fact, I enjoyed eating some of it myself. A quart of molasses and two tablespoonfuls of butter were boiled gently on the back of the stove for nearly an hour. When nearly

cold, a tablespoonful of ground ginger and flour enough to make a stiff dough were added; this was rolled thin, and cut into cakes with a one-inch cutter. They will not rise, but will spread a good deal over the pan while in the oven; therefore they should be put some distance apart. Bake three to five minutes, and let them cool before removing from the pan.

COCONUT CAKE.—Take two cups of sugar, two tablespoonfuls of butter, and the yolks of two eggs; beat to a foam, add to it one cup and a third of sweet milk; add gradually three cups and a quarter of flour, and three teaspoonfuls of baking powder, or two teaspoonfuls of cream of tartar and one of soda. Bake in the same way as jelly cake, but when each layer is cool, instead of using jelly, make a meringue of the white of one egg well beaten, nine teaspoonfuls of white sugar, and grated coconut, using the whole or half of one as convenient. Mix and spread evenly on one of the cakes or layers, then put on another layer, and so on until you have an ordinary sized loaf of cake. This quantity should make two loaves.

Lamp Brackets—Useful and Ornamental.

Those who use lamps—and this includes the majority of our readers—will often find it very convenient to have brackets on which to place them. The bracket may be merely a simple shelf or a very elaborate affair. We like to see such things home-made, and they afford an opportunity for the younger members of the family, both boys and girls, to display their skill. A lady of our acquaint-

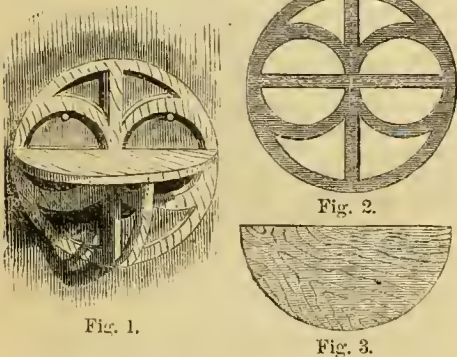


Fig. 1.

Fig. 2.

Fig. 3.

ance is quite celebrated among her friends for her handiwork with the saw and knife. A very simple and not inelegant pattern for beginners is sent by "A. D. H." Blairsville, Pa., who says: "Take $1\frac{1}{2}$ -inch stuff, and mark out with the compasses a circle 10 inches in diameter. Inside of this, mark another circle $\frac{3}{4}$ of an inch less. Divide the circle



Fig. 4.

into four parts, as shown by the dotted lines in fig. 2; then mark the smaller circles, leaving the cross-bars as shown in the engraving. This forms the back-piece; a solid semicircular piece, fig. 3, serves for the shelf, and the brace, fig. 4, is made exactly like one-quarter of the back-piece. The whole can be laid out with the compasses and square, and be cut out with a compass-saw. The parts may be put together with wooden pins or with glue. It may be suspended by means of two brass-headed nails driven into the wall, as shown in fig. 1. If the bracket is made of soft wood, the parts may be cut out with a knife." When one becomes skilled in this kind of work, the pattern may be made more elaborate. In fig. 5 our artist suggests a slight variation, which will give an idea for other patterns. When the regular form first given is departed from, it is best to make the pattern on a piece of stiff paper, and carefully draw it out upon the wood. The wood of which cigar-boxes are made is often used for small work of this kind. There is a great deal of power wasted by boys in whittling, and it would be well if these suggestions would induce them to whittle to some purpose. A pair of neat brackets would allow a boy to surprise his mother



Fig. 5.

or some friend with a most acceptable present, and even the father need not be ashamed to bring in from the workshop a pair that he has made.

Amusements for Children.

BY MRS. LUCY LAMB.

"How shall I amuse the children during the evenings?" is a question of no slight importance to many mothers who have sons growing up.

In almost every neighborhood there are some boys who are allowed to stay in the streets from the time that school closes until bedtime. This street night-school is the place where many boys take their first lessons in crime.

Neighbor Brown has four sons, some of them grown now, and all of them worthless. Years ago, when a teacher in a public school where they were in attendance, I became acquainted with their manner of life. They were little boys then, bright, and possessed of more than ordinary talent. But there was, for them, no home attraction. The father attended all the meetings of the church, but left his boys to spend their evenings in the streets, planning and executing mischief. Studies were neglected and school-time wasted. Playing truant, robbing fruit-trees, and kindred diversions, came to be common pastimes for boys whose parents, though good people, and members of a church, yet failed to restrain their sons from the influence of bad companions by providing such amusements at home as would make them love it.

On the other hand I know a little boy thirteen years of age, (I say "little boy," because he has no ambition to be thought a man yet, and does not use tobacco,) who has never learned to love the street-school. During the intermissions of study his play is heartily relished, but the evenings at home are the crowning joy of the day. If there are no lessons to be learned, there are two good hours for some kind of entertainment. This little boy has three sisters, younger than himself, and a baby-brother, all of whom require some one to direct their pastimes. In this instance the office is filled by one who loves them best, the mother. Regarding the early years of her children as most important in forming their tastes and giving tone to their characters, she has devoted her time and energies to cultivating in them a taste for such innocent amusements as every home may offer to its children.

In the first place a choice and careful selection of reading matter is provided. The *American Agriculturist*, Little Corporal, and other good papers, find their way to the pleasant home of these little ones. Old, cast-off blank books and scraps of clean letter paper are carefully hoarded to be adorned with pencil sketches of animals, plants, buildings, or articles of furniture, sometimes colored with the contents of a twenty-five-cent box of water-color paints; and these serve to amuse and instruct, while they insure safety from "evil communications." When the voices of truant schoolmates chance to reach the ears of the folded lambs at home, a merry game of "blind-man's-buff," or a treat of pop corn will prove a very certain counter-attraction, and richly repay the mother, who esteems it not beneath her dignity to join the children in their sports.

For children who are old enough to understand them, an almost endless fund of entertainment can be found in playing charades. To illustrate very simply for beginners, let me explain how this may be done. Suppose there are four children. Let two go into the next room and privately decide upon some word. To begin with, let them choose the word *High-way*. That is easy to act. Let one of them open the door and announce to the others that the word is composed of two syllables, and there will be two acts. Then let one or both come in and mount a chair or table and stand for a moment. This is the first act. Then bring in the scales and weigh some article. This is the second act. Those in the room must solve or "guess" what the word is; and then they go out and choose a word to puzzle the others.

A little practice will enable children to act a great

many words, and while engaged in such harmless diversions, with Mamma to assist occasionally, many pleasant hours can be spent around the fireside.

For Sunday evening employment, something different should be chosen. The youngest can always be interested in the rehearsal of Bible stories. While too young to read for themselves, a lively description of the prominent scenes and incidents of Bible history may be so fixed in their minds that the pictures will remain, even after they read the stories for themselves in later years.

To Make Tea.—By Mrs. I. J., Northampton, Mass. First, heat the teapot by pouring boiling water into it; pour this out, and put into the pot as much good tea as you wish to use; then pour in boiling water enough to completely cover the tea so as to wet it thoroughly. Set the pot on the cooking table, if that is handy, (it need not be set on anything that is hot) and in five minutes pour in boiling water enough for the first cups, and pour out immediately. If a second cup, or cups, are wished, and tea enough has been put in the pot, add boiling water in sufficient quantity. This rule applies particularly to Japanese and Hyson teas. I do not know that black tea would be as good made in this way, as if it were steeped longer. That may depend on taste.

Boiled Brown Bread.—Mrs. E. A. M., Springfield, Mass., sends the following, which she says is "very good." We do not see the use of the coffee, unless it be to give a color to the bread.—One pint sifted corn meal, one pint unsifted rye meal, $\frac{3}{4}$ cup molasses, $\frac{1}{2}$ cup liquid coffee, 1 teaspoonful salt, 1 heaping teaspoonful of soda. Mix to a rather stiff batter with sour milk or buttermilk (buttermilk is the better), pour into a 3-quart tin pail, and cover tightly; set the pail in a kettle of boiling water, and keep it boiling six or eight hours.

Mary James' Cracker Pudding.—"E. H. F.," Leicester, Mass., communicates the following, which is commended as "cheap and first-rate."—Two quarts of milk; ten soft crackers; one cup of molasses; one cup each of sugar, whole raisins, and chopped suet. Break up (not pound) the crackers, and put them into the pan with the milk (cold), and set the pan on the stove until they are soft; then add the other ingredients. Salt and spice to taste, and bake in a *slow* oven for three hours. Stir once or twice after it begins to bake, and be careful not to let the raisins burn on the bottom. Bake in a deep pan or crock, and be sure not to bake too fast on the bottom.

Pudding Sauce Wanted.—A friend in Illinois wishes us to give recipes for pudding sauce, to be composed of articles readily obtained by farmers, and not calculated to disagree with a digestion less delicate than that of an ostrich.

Summer Drink.—Take the juice of six lemons and one pineapple, cut in small pieces, add sugar to suit the taste, and put in plenty of ice with the water. **UNIQUE.**

Popping Corn.—Geo. W. H. says: "In the April number of the *Agriculturist* there was a recipe for popping corn. I think I know a better one, viz.: Place in an iron vessel (which should be rather deep and broad) enough salt to cover the bottom to the depth of half an inch. Place it over a hot fire, and put in as much corn as you wish to pop; cover it over, to prevent the corn from flying out when it bursts, and in a few minutes the greater part of the corn will be found nicely popped."

Cream Batter Pudding.—Half a pint of sour cream; half a pint of sweet milk; half a pint of flour; 3 eggs; a little salt; half a teaspoonful of soda. Beat the whites and yolks of the eggs separately, and add the whites last. Bake in a moderately hot oven. This is the *queen* of batter puddings. A very nice sauce for it is made by adding to a coffee cup of boiling milk, a tablespoonful of flour, first wet with a little cold milk. Have ready a teaspoonful of sugar and half a teaspoonful of butter, thoroughly stirred together; and when the flour and milk have boiled two or three minutes, add the sugar and butter. Stir well, but do not boil. Flavor with vanilla.

BOYS & GIRLS' COLUMNS.

Stick to the Plow and the Plow.

Don't come to the city, my boy. Your chance, in the long run, is better where you are. Hundreds, indeed, make fortunes here, but thousands live wearisome and even suffering lives in the city. Clerks have larger salaries than young farmers, but then their expenses for boarding, clothes, and amusements, are so much larger, that less is saved at the end of the year. Then the temptations of the city are so strong and so constant that few young men resist them. Not many young city clerks, even if they avoid bad company, are able early in life to have a home of their own. A young man in the country, soon after his time becomes his own, can secure capital enough, with an economical wife, to set up housekeeping for himself, and have a quiet, comfortable, and even beautiful little home of his own. One of the wealthiest men in the vicinity of Boston, who died a few years since, said the happiest years of his life were passed when he was gathering, very slowly, the beginnings of his fortune. When he married, he and his wife were worth, each, twenty-five cents, and they labored lovingly and happily together. This was certainly a very small fortune for two to commence upon, but they were worth hundreds of thousands when they died, gathered by economical labor. The writer knows an excellent young man in this city who is now nearly thirty. He has long been engaged to a young lady of fine talents and a good temper. It would be a great comfort to both to be married; but then, his salary, although quite large, would not support them in the style of life to which the young woman has been accustomed in her own home. Besides, the position of clerks is very uncertain. By the failure of what was considered one of the strongest houses in the city, this young man was thrown out of place and salary for six months. Stick to the plow then, or to some solid, wholesome trade. You will then be sure of a comfortable living. You can earlier have a home of your own, and you will be less exposed to the constant changes in business, which destroy at one blow the earnings of year.

How Noah's Animals are Made.

At the Royal Gardens at Kew, England, are collected plants from all parts of the world, and in a Museum at the same place are shown the various things that are made from plants, from the delicate gauze made of pineapple fibre, to large specimens of plank and other lumber. If our young friends were to visit this Museum,

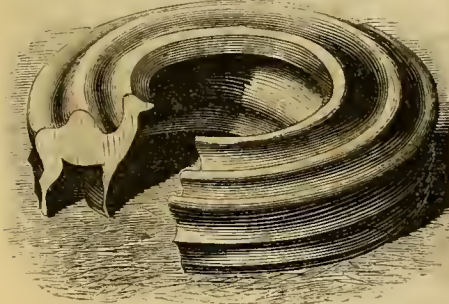


Fig. 1.—A BLOCK FOR CAMELS.

they would find many things to interest them, and among the rest, toys made of wood. "Children's toys in a Royal Museum?" Certainly; toys are very useful things. Those who make them earn their living by them, and the boys and girls who finally get them are amused and often instructed. One of the commonest and most popular toys is Noah's Ark, which almost every boy and girl knows is a

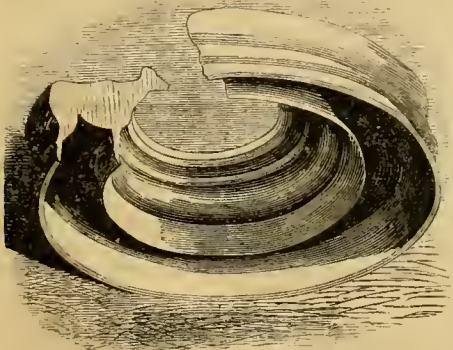


Fig. 2.—A BLOCK FOR LAMBS.

minute model of the ark with a wooden Noah's family, and a large number of pairs of wooden animals, from the elephant down to the smallest. It is great fun to arrange

these animals in twos, and make a procession marching into the ark. Older persons have wondered how all these animals could be made so cheaply. In the Kew Museum some specimens of the wooden manufactures of Saxony show the way in which these animals are made. The wood for each is turned out of the proper shape in a lathe. It looks like a circular picture frame, or moulding—and nothing could look less like one of Noah's animals. This circle is then sawed into pieces, and, as will be seen by the engraving, each piece makes an animal, which only needs a little smoothing up, and painting, and to be furnished with ears, tail, horns, etc., as the case may be. The upper engraving shows a camel, the lower one, a lamb. This was thought sufficiently curious to be shown in the learned Gardeners' Chronicle, and we borrow the picture for our boys and girls.

Appearances against Him; the Truth in His Favor.

A New England merchant, doing a large business, requiring several clerks, a short time since missed several articles of value from his store. He determined to watch the habits of these young men to discover, if possible, which one, if either of them, was untrustworthy. There was one of them who appeared particularly active and faithful; was the first to come and the last to leave at night; his dress was inferior to that of the other clerks; and he was evidently not particularly popular among them. The merchant learned that this young man remained for half an hour or more after the others left, with the door of the store locked. This circumstance awakened his suspicions, and he arranged a plan to conceal himself in the store, so that he might discover what occurred when the clerk supposed himself to be unobserved. Having sent the young man upon an errand just before the hour of closing, he entered his place of concealment. The door was locked as usual, at the proper time. The clerk at once began to sweep and put the establishment in order. While waiting for the dust to settle, he was seen to go behind the counter, and taking something from under it, place it in the breast of his coat. The merchant was now all alive to discover what had been taken and what was to be done with it. The young man went to the window and sat in silence a few moments, apparently examining the package which he had taken from his breast. The merchant was not left long in doubt. His clerk soon fell upon his knees; he saw that it was the Bible he had been reading; and now he offered aloud a simple and touching prayer, for himself, his mother and sister, his employer, and particularly for a brother clerk, who, he feared, was yielding to temptation. After he had finished dusting he left the store, unconscious of having had a human eye upon him.

It is easy to believe that the merchant was deeply affected by what he had seen and heard. This clerk's salary was increased several hundred dollars a year, and he was given the position made vacant by the discharge of another whose criminal acts had been discovered.

Prairie Life for Invalid Girls.

BY GRACE PERCIVAL.

I write this sketch in the hope of arousing one of those pale, nervous, young ladies who lie on their sofas the most of the time, to take more exercise, and, if possible, out in the fields, among the birds and flowers. My health had always been rather delicate, until we moved out on the farm, nearly a year ago, and now I can hardly believe that I am the same person, so great is the change. One morning last May papa came in, and finding me reclining on the lounge, asked me if I would not like to help drop corn. Never having been accustomed to work much, I looked surprised, I have no doubt, at the proposition; but, after considerable coaxing, I at length rather dubiously consented to try the experiment. So after arraying myself in a short calico dress, thick shoes, and large straw hat, we set out for the field. Our way led through a meadow of brightest green, spangled with dew, and embroidered with beautiful wild flowers. The field was situated on a knoll, and commanded a wide view of the surrounding prairie. I felt like shouting aloud, every thing looked so lovely, that bright May morning. But there was the corn to drop! and I was soon busily engaged in this very romantic occupation. I did not become quite fascinated with it; though I fear my mind was more intent on some day-dream, suggested by that lovely scene, than upon my work. But that evening, when I sat down to the supper table, I felt that the day's work had done me good, and I was refreshed in mind and body. I resolved to take a walk every day, and be out in the open air as much as possible. I have never had any reason to regret keeping that resolve. Will that invalid young lady for whose benefit I am writing this listen to a word of advice? If you can, make your home in the country; take an interest in out-door work and rural recreations, such as walking, riding, bathing, and many

others I might mention. A flower garden is a very pleasant place for exercise, while keeping it in order and enjoying its products. Every thing is lovely in the country! There are murmuring brooks, shaded by handsome trees, soft, velvety meadows, and beautiful birds and flowers, all leading your soul from the contemplation of things terrestrial up to Nature's God, and the glories of a celestial home.

What's the difference between an overcoat and a baby? An overcoat is what you wear (were), a baby what you want.

Answers to Problems and Puzzles.

The following are answers to the puzzles in the May number, page 183. No. 343, Yours (wers). No. 344. Be sure you are right, then go ahead. The following have sent correct answers: Isaac N. Millikan, Walter P. Ferguson, George A. Jacobs, Addie M. N., D. L. Morrison, A. J. Vincent, Frederick Pfister, P. A. Sellers, Milton Snyder, D. H. B., Robert S. Marshall, Mira M. Walker, Daniel Lees (2), James A. Sanford (2), Ella Lathrop, J. V. Oren, Mrs. J. V. Oren.

Motto of market gardeners: "Let us have peas."

The first time little Billy S. noticed the thunder, he said, "Mother, they are scouring up in heaven." His mother said, "How do you know, my child?" He replied, "I hear 'em moving the chairs about."

New Puzzles to be Answered.



No. 344. *Rebus.*—A hint for gossipers to heed.



No. 345. *Puzzle Picture*—Japanese Jugglers. How many are there?



No. 346. *Conundrum.*—Why have these fishes no substance.



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MANY A SLIP BETWEEN THE CUP AND THE LIP.—DRAWN BY HERRICK.—Engraved for the American Agriculturist.

He was so sure of a pigeon supper at midnight that he can hardly believe his own eyes as the bird flies away and a few tail feathers drop out of his mouth! It is the Virginia Opossum who has planned this dark deed, as his cruel habit is. Quite an innocent looking little fellow, you see; but he is a great thief and burglar, nevertheless! He is about the size of a cat, twenty inches long, with the snout of a pig. He has a remarkable tail of fifteen inches, by which he suspends himself from the branch of a tree. He plunders poultry-yards, steals corn, loves nuts and berries, and often hunts birds' nests by night in order to catch the sitting mother, as well as to eat her eggs. Hunting the opossum is a favorite amusement at the South, especially among the young negroes, who are very fond of its flesh in the autumn, when it is tender, fat, and flavored like that of a sucking pig.

We trust none of our young readers will "play 'possum"; for this animal is a lazy fellow. He loves to lie during the day upon his back in the sun. When a boy is lazy, he is said to be "playing 'possum." We certainly hope they will not imitate his midnight adventure. Don't disturb the birds or their nests! It would have served this intruder right, if a sharp colored boy had been represented, hid away in the branches, seizing the opossum just as his victim flies from his open jaws.

DON'T LOSE THE R's.—In many parts of the country the letter r is in great danger of being lost from the language. It is very amusing to hear some persons pronounce words in which there is the letter r. We know young people who never say bird, but it is always *boied*, as near as it can be written. These same people never go to church, but they attend the *choich*, and hear the minister preach upon *ctoinity*, as they miscall eternity.

The Cedar Rapids Times says that a young girl, "sweet sixteen," of Linn County, Iowa, for six weeks last winter, during the sickness of her father and mother, attended 48 head of sheep, 8 head of horses, 12 head of cattle, and 2 calves, besides milking three cows, driving the cattle one quarter of a mile every day to water, cleaning the horses' stable, doing the housework, and taking care of her sick parents. Such a girl is a real heroine.

The late lamented Mr. Brady, at a complimentary supper which he attended a few weeks before he died, made an amusing allusion to the plague of mosquitos which sometimes falls upon New Yorkers. Two Irishmen, he said, had just come over and landed at the city. They had heard of the terrible bite of these little *sarpenis*, and were in no little dread of them. They had a little expe-

rience of their lances in their bedroom while they were undressing. They hurried to get beneath the bed-clothes, which they at once drew over their faces for a defence. Mike, after a little, drew down the sheet and looked out to survey the scene; but he soon drew his head under the covering again, and cried out to his companion, "They are in a'rnest, Pat, by me sowl, for they've brought their lanterns wid them!" Mike had seen, as he looked out into his room, a lightning-bug—an insect with which he was not familiar.

A few Sundays since a Lewiston clergyman in his pulpit had occasion to use his handkerchief, and to his astonishment scattered in all directions some fifty specimens of paper dolls, which his little girl had lodged in the parental pocket for safe keeping. The effect upon the audience was as marked as that created by the Japanese paper butterfly player.

The son of a well-known publisher perpetrated an odd conundrum the other day upon a friend of ours who has a shining bald head, entirely innocent of hair, much to his amusement. "Why," said little pertness, "is your head like heaven?" "I give up," said the Col. "Because there is no parting there, and it will never die (dye)."

"THE BEST JUVENILE MAGAZINE EVER PUBLISHED IN ANY LAND OR LANGUAGE."

OUR YOUNG FOLKS.

The Story of a Bad Boy, by Mr. T. B. ALDRICH, has excited a deeper and more general interest than any other story ever published in a Juvenile Magazine. It is awaited monthly with impatience, and read with the greatest eagerness and delight by both old and young. We give below an extract from the June number of "OUR YOUNG FOLKS."

GYPSY, THE PONY.

This record of my life at Rivermouth would be strangely incomplete did I not devote an entire chapter to Gypsy. I had other pets, of course; for what healthy boy could long exist without numerous friends in the animal kingdom? I had two white mice that were forever gnawing their way out of a pasteboard *chateau*, and crawling over my face when I lay asleep. I used to keep the pink-eyed little beggars in my bedroom, greatly to the annoyance of Miss Abigail, who was constantly fancying that one of the mice had secreted itself somewhere about her person.

I also owned a dog, a terrier, who managed in some inscrutable way to pick a quarrel with the moon, and on bright nights kept up such a ki-y-ing in our back garden, that we were finally forced to dispose of him at private sale. He was purchased by Mr. Oxford, the butcher. I protested against the arrangement, and ever afterwards, when we had sausages from Mr. Oxford's shop, I made believe I detected in them certain evidences that Cato had been foully dealt with.

Of birds I had no end,—robins, purple-martins, wrens, bulfinches, bobolinks, ringdoves, and pigeons. At one time I took solid comfort in the iniquitous society of a dissipated old parrot, who talked so terribly, that the Rev. W. Bird Hawkins, happening to get a sample of Poll's vituperative powers, pronounced him "a benighted heathen," and advised the Captain to get rid of him. A brace of turtles supplanted the parrot in my affections; the turtles gave way to rabbits; and the rabbits in turn yielded to the superior charms of a small monkey, which the Captain bought of a sailor lately from the coast of Africa.

But Gypsy was the prime favorite, in spite of many rivals. I never grew weary of her. She was the most knowing little thing in the world. Her proper sphere in life—and the one to which she ultimately attained—was the sawdust arena of a travelling circus. There was nothing short of the three R's, reading, riding, and 'rithmetic, that Gypsy could n't be taught. The gift of speech was not hers, but the faculty of thought was. She combined the wisdom of the serpent with the harmlessness of the dove.

My little friend, to be sure, was not exempt from certain graceful weaknesses, inseparable, perhaps, from the female character. She was very pretty,—and she knew it. She was also passionately fond of dress,—by which I mean her best harness. When she had this on, her curvettings and prancings were laughable, though in ordinary tackle she went along demurely enough. There was something in the enamelled leather and the silver-washed mountings that chimed with her artistic sense. To have her mane braided, and a rose or a pansy stuck into her forelock, was to make her too conceited for anything.

She had another trait not rare among her sex. She liked the attentions of young gentlemen, while the society of girls bored her. She would drag them, sulkily, in the cart; but as for permitting one of them in the saddle, the idea was preposterous. Once when Pepper Whitecomb's sister, in spite of our remonstrances, ventured to mount her, Gypsy gave a little indignant neigh, and tossed the gentle Emma heels over head in no time. But with any of the boys the mare was as docile as a lamb.

Her treatment of the several members of the family was comical. For the Captain she entertained a wholesome respect, and was always on her good behavior when he was around. As to Miss Abigail, Gypsy simply laughed at her,—literally laughed, contracting her upper lip and displaying all her snow-white teeth, as if something about Miss Abigail struck her, Gypsy, as being extremely ridiculous.

Kitty Collins, for some reason or another, was afraid of the pony, or pretended to be. The sagacious little animal knew it, of course, and frequently when Kitty was hanging out clothes near the stable, the mare, being loose in the yard, would make short plunges at her. Once Gypsy seized the basket of clothes-pins with her teeth, and rising on her hind legs, pawing the air with her fore feet, followed Kitty clear up to the scullery steps.

That part of the yard was shut off from the rest by a gate; but no gate was proof against Gypsy's ingenuity. She could let down bars, lift up latches, draw bolts, and turn all sorts of buttons. This accomplishment rendered it hazardous for Miss Abigail or Kitty to leave any eatables on the kitchen table near the window. On one occasion Gypsy put in her head and lapped up six custard pies that had been placed by the casement to cool.

An account of my young lady's various pranks would fill a thick volume. A favorite trick of hers, on being requested to "walk like Miss Abigail," was to assume a little skittish gait so true to nature that Miss Abigail herself was obliged to admit the cleverness of the imitation.

The idea of putting Gypsy through a systematic course of instruction was suggested to me by a visit to the circus which gave an annual performance in Rivermouth. This show embraced, among its attractions, a number of trained Shetland ponies, and I determined that Gypsy should likewise have the benefit of a liberal education. I succeeded in teaching her to waltz, to fire a pistol by tugging a string tied to the trigger, to lie down dead, to wink one eye, and to execute many other feats of a difficult nature. She took to her studies admirably, and enjoyed the whole thing as much as anybody.

The monkey was a perpetual marvel to Gypsy. They became bosom-friends in an incredibly brief period, and were never easy out of each other's sight. Prince Zany—that's what Pepper Whitecomb and I christened him one day, much to the disgust of the monkey, who bit a piece out of Pepper's nose—resided in the stable, and went to roost every night on the pony's back, where I usually found him in the morning. Whenever I rode out, I was obliged to secure his Highness the Prince with a stout cord to the fence, he chattering all the time like a madman.

One afternoon as I was cantering through the crowded part of the town, I noticed that the people in the street stopped, stared at me, and fell to laughing. I turned round in the saddle, and there was Zany, with a great burdock leaf in his paw, perched up behind me on the crupper, as solemn as a judge.

After a few months, poor Zany sickened mysteriously, and died. The thought occurred to me then, and comes back to me now with redoubled force, that Miss Abigail must have given him some hot-drops. Zany left a large circle of sorrowing friends, if not relatives. Gypsy, I think, never entirely recovered from the shock occasioned by his early demise. She became fonder of me, though; and one of her cunningest demonstrations was to escape from the stable-yard, and trot up to the door of the Temple Grammar School, where I would discover her at recess patiently waiting for me, with her fore feet on the second step, and wisps of straw standing out all over her.

I should fail if I tried to tell how dear the pony was to me. Even hard, unloving men become attached to the horses they take care of; so I, who was neither unloving nor hard, grew to love every glossy hair of the pretty little creature that depended on me for her soft straw bed and her daily modicum of oats. In my prayer at night I never forgot to mention Gypsy, with the rest of the family,—generally setting forth her claims first.

Whatever relates to Gypsy belongs properly to this narrative; therefore I offer no apology for resending from oblivion, and holdly printing here, a short composition which I wrote in the early part of my first quarter at the Temple Grammar School. It is my maiden effort in a difficult art, and is, perhaps, lacking in those graces of thought and style which are reached only after the severest practice.

Every Wednesday morning, on entering school, each pupil was expected to lay his exercise on Mr. Grimshaw's desk; the subject was usually selected by Mr. Grimshaw himself, the Monday previous. With a humor characteristic of him, our teacher had instituted two prizes, one for the best and the other for the worst composition of the month. The first prize consisted of a penknife, or a pencil-case, or some such article dear to the heart of youth; the second prize entitled the winner to wear for an hour or two a sort of conical paper cap, on the front of which was written, in tall letters, this modest admission: I AM A DUNCE! The competitor who took prize No. 2 was n't generally an object of envy.

My pulse beat high with pride and expectation that Wednesday morning, as I laid my essay, neatly folded, on the master's table. I firmly decline to say which prize I won; but here is the composition to speak for itself:—

The Horse

The horse is a usefull animal he is nice to have. i have one. her name is gipsy. She bites, her main is very long. one Day i was washing her front foot when she bent down her head and lifted me up by the trousers and stumbled me into the water. She hit me six times with a piece of broop the way of the transgresser is hard

J. Bailey

The following letter expresses fairly the opinion entertained of "OUR YOUNG FOLKS," as communicated in numerous letters to the Publishers.

SPRINGFIELD, Feb. 23., 1869.

TO THE EDITORS OF "OUR YOUNG FOLKS."

"Your magazine is such a source of delight in our family, and at the same time so valuable and instructive to our children, that I feel impelled to write you and thank you for what you are doing for them and for others like them. We have taken the magazine ever since it started, but we think it more interesting than ever this year.

"The 'Story of a Bad Boy' pleases my boys so much that they fairly commit each instalment to memory. Mr. Trowbridge's articles on Glass-Making we have found particularly interesting, and so are the articles by Mr. Parton, and Mr. Hale, and Mrs. Agassiz. I assure you that the monthly arrival of your Magazine is a great event in our household. Expectation gets on tiptoe about the middle of each month, after which time the Post-office boy is closely watched by two pair of eager young eyes, on the lookout for what they call 'the best magazine that ever was.'

"In sober earnest, dear Editors, I feel that you are doing my children an inestimable good, that you are furnishing to them a style of reading in every respect admirable and particularly adapted to them; and as I see the interest with which they read what you prepare for them, and observe its restraining and developing influence upon their young minds, I feel grateful that in their education I have such a valuable assistant as your magazine.

Respectfully yours, Mrs. A. M.

"OUR YOUNG FOLKS" is only Two Dollars a year, and the numbers for January, February, March, and April, 1869, will be sent free to any one who wishes to examine the Magazine, on application to the Publishers,

FIELDS, OSGOOD & CO., 124 Tremont Street, Boston.

AUCTION SALE OF BLOODED DAIRY STOCK.

THE FOURTH ANNUAL SALE OF THOROUGHBRED AND GRADE ALDERNEY AND AYRSHIRE CALVES HEIFERS, COWS AND BULLS, will take place at the Farm of the subscriber, situated one-half mile from Railroad Depot, in the city of New London, Connecticut.

On Wednesday, June 9th, 1869.

Sale to commence at 11 o'clock A. M., and no postponement on account of weather. 135 head of this celebrated Stock will be sold as above, without reserve, to the highest bidder.

- 25 of the number are Spring Calves.
20 " " " Yearlings.
15 " " " Two year old, in Calif.
63 " " " Cows, fresh in Milk.
5 thoroughbred Alderney Bulls.
5 Ayrshire Bulls.

Reliable pedigrees furnished for all thoroughbreds sold. Catalogues on the day of sale.

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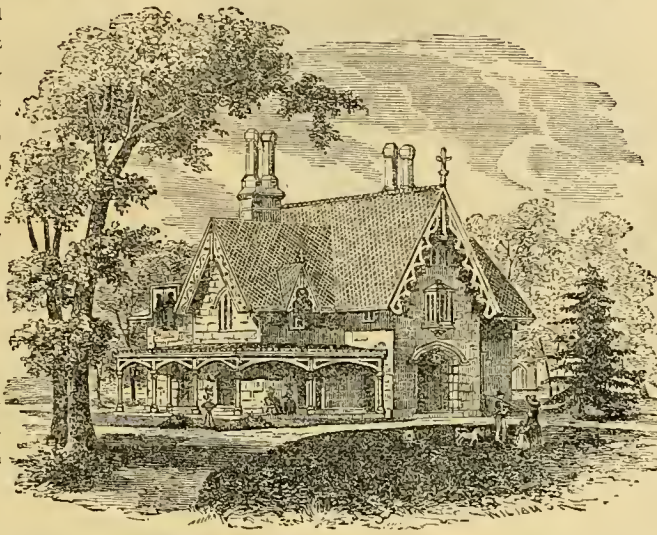
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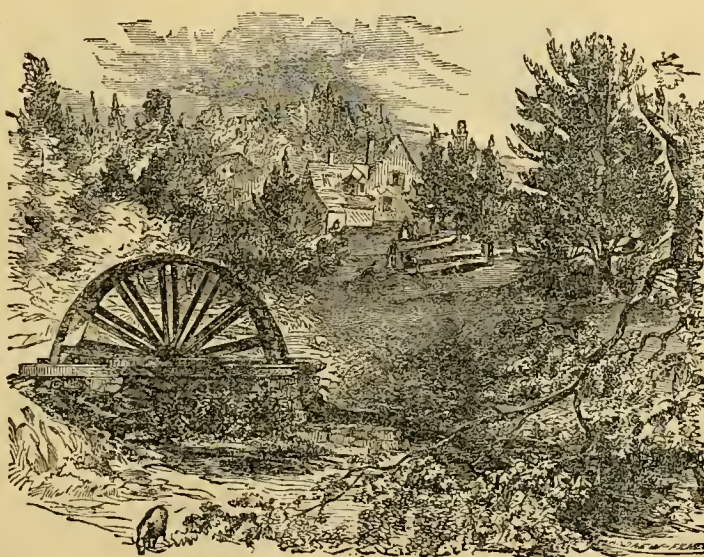
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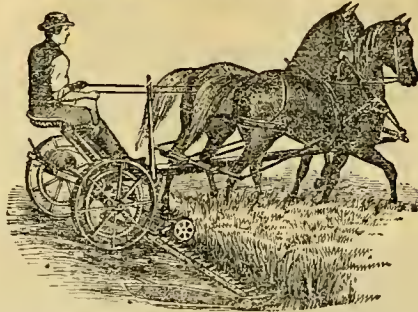
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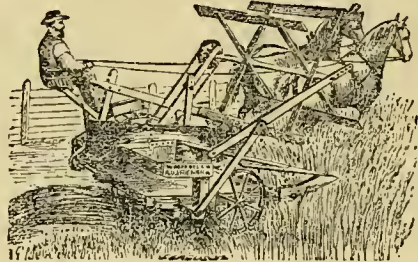
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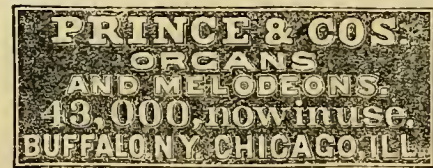
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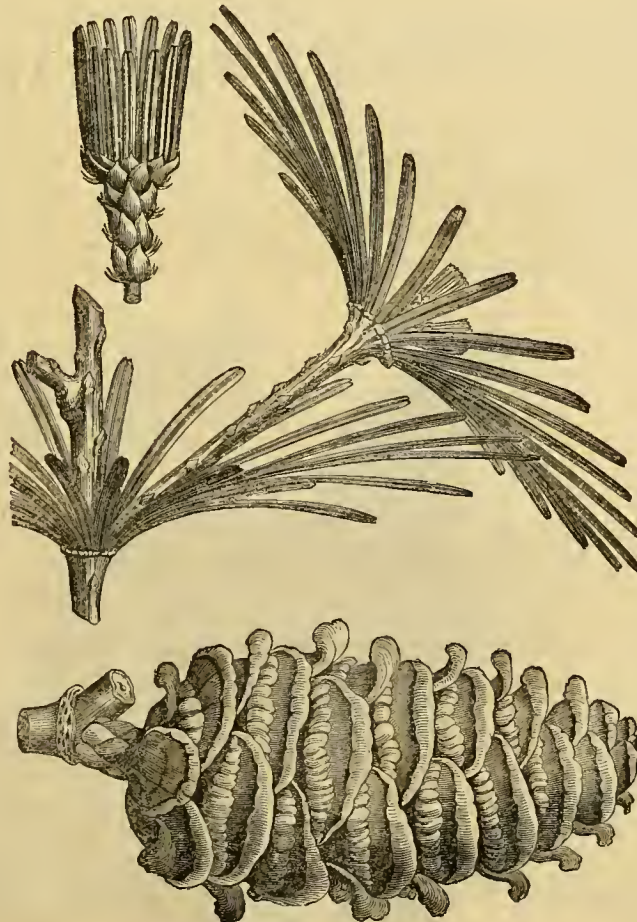
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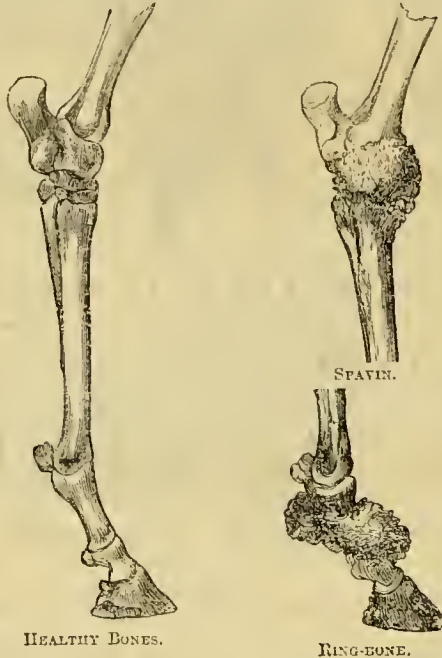
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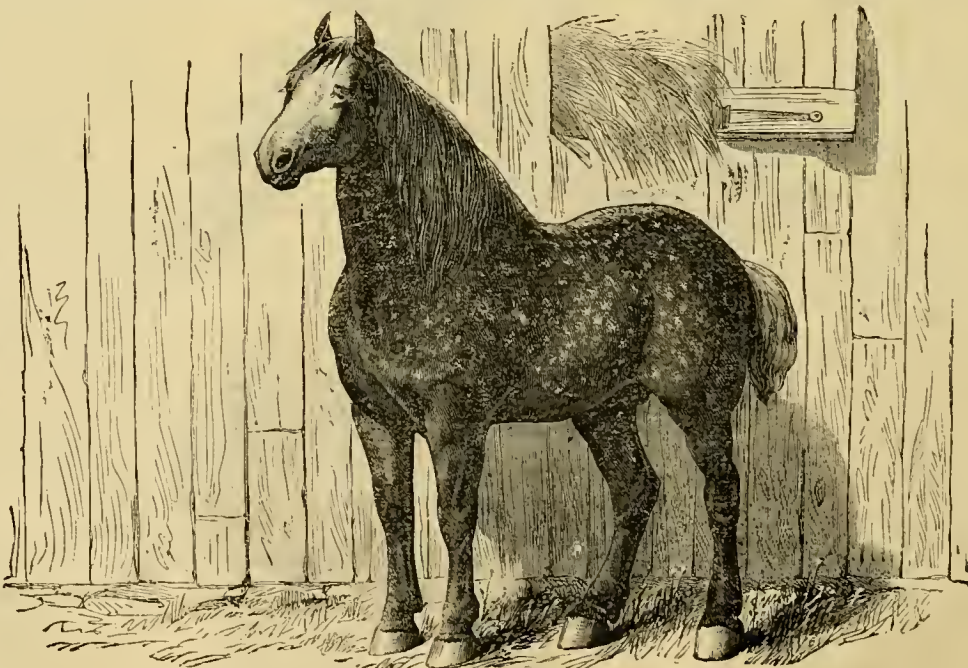


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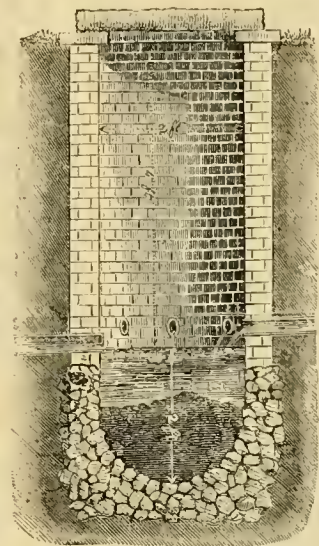
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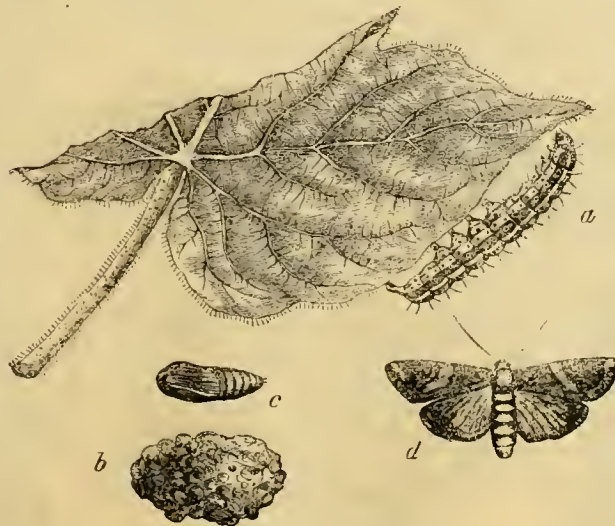
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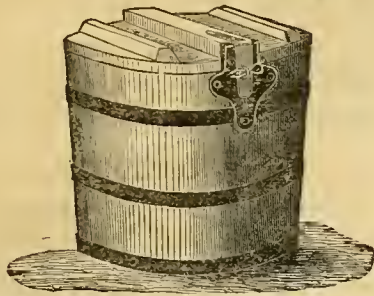
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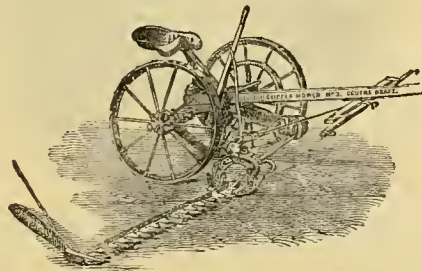
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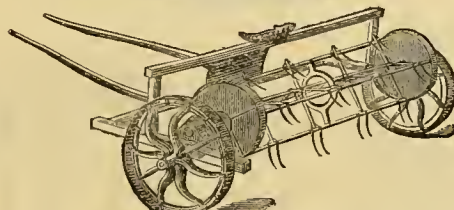
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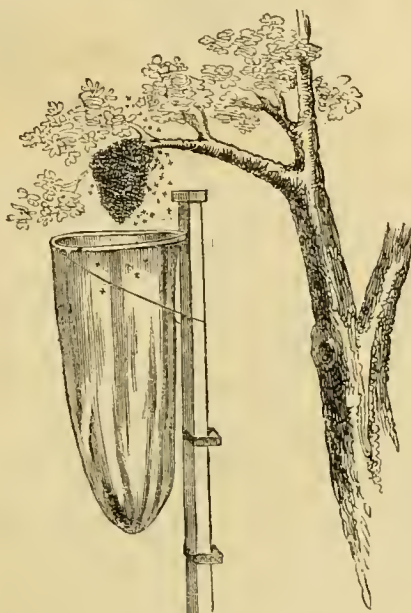
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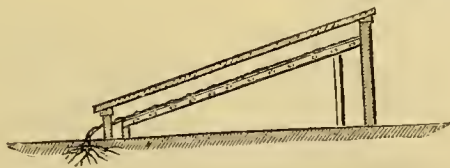
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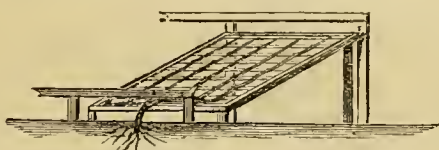
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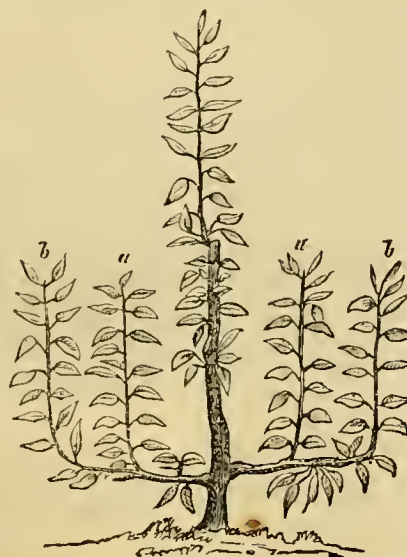
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AMERICAN AGRICULTURIST.

NEW-YORK, JULY, 1869.

This month finds the farmers over the length and breadth of the land overwhelmed with work, especially where hay is an important crop. The commercial value of the grass crop, and perhaps we may confine the remark to hay, exceeds that of all others, taken together, on most of the farms over the Northern States. As we now practice, it is the life of our live-stock for six months of the year. Though corn fodder may be substituted for it, though many forage crops may be raised which will supply deficiencies in the crop of hay, yet this is very little done, and a short hay crop brings want to both the farmer and his cattle. It is fortunate that the bulk of the crop is cut when it is not too late to provide other supplies in case of its partial failure. See paragraph below under the head of forage crops. Facilities for cutting and curing hay are increasing every year. Mowing machines, tedders, horse-rakes, and horse-forks, save hands and lighten labor, besides enabling us to cure the hay better, and get it in with less damage from rain and sun—for the injury produced by oversunning is often quite as great as that caused by showers. Our care in securing the hay often leads us to neglect manuring the land as soon as the crop is off. This is the best time, and not a day ought to be allowed to pass before the top-dressing is applied, if the greatest benefit would be received from the manure.

Stolen crops are often a source of considerable profit. Those which may be slipped in at this season among corn and potatoes, are beans and turnips, and if the land is in good heart, and the exposure sunny, it will often pay well to sow one or the other, or both, calculating to cut the corn up at the ground as soon as it is glazed, and let them have the sun.

Whatever the plans for work may be, do not overwork. Do not crowd the boys. They should be quick and steady at light work, but we have seen so many fine boys of 16 or 18 twisted out of shape for life by working themselves too hard during haying and harvest, that we cannot forbear warning both farmers and their sons against too hard, straining labor.

Hints About Work.

Barns.—If the barn was not cleaned out in June, set this down as a job for the first rainy day. Sweep up the grass and clover seed, brush down the cobwebs, swallows' nests, and accumulations on the beams, under the eaves, and in cracks and crevices; put the old hay where it may be first used.

Haying and Harvest.—It requires a good general to manage the cutting and curing of a large grass crop, and the harvesting of several fields of grain of different kinds, avoiding injury from rains and thunder showers, if they prevail, unless a large gang of hands and teams stand ready all the time to do whatever is most needed. Good plans are worth much, and should be made, knowing the order in which different fields of grass and grain will be fit to cut, where the product of each is to be stored, permanently or temporarily, the use to which the hay, grain, or straw is to be put, and the amount of work that can be done each week.

Hay-making.—Cut with the machine when the dew is off. If heavy, and a tedder is used, as soon as well wilted stir constantly until cured enough to cock up; then throw into windrows or cocks while the sun is still high and the hay is hot. It is best to use the bay caps every night, and to apply them before dew begins to fall. On eastern slopes, this is before five o'clock, usually, and the men will have an hour to mow away hay, hoe corn, or other work. Let the hay cure as much as possible in the cock; and after the first day keep it in heaps or windrows, turning and loosening them up frequently, but never spreading them thin,—that is, if you have caps, to protect against showers.

Cutting and Curing Grain.—It requires a farmer

of some experience to decide exactly the best moment to put in the sickle—(McCormick, or Buckeye). Both grain and straw are worth more if cut early. The weight of grain is greater if allowed to stand until fully ripe. It cures quicker, also, if ripe, for it may be bound at once, and shocked

TEN SHEAVES, up with much sunning. Do not delay binding if the weather be at all "catching," and make good, substantial shocks, that will shed

rain, and stand through a smart blow, such as we are likely to have at this season, often accompanied by hail. The most compact and well-braced upright shocks are made of ten or twelve sheaves, set together

as shown, and capped each with two sheaves, bound together by an extra strong band. Shocks made by laying two, three, or four sheaves, with the heads together, and piling others, heads in, upon and over them, are very good for temporary use, to stand a day or two, when rain threatens, but the others permit much more circulation of air, shed rain better, and will stand without serious harm a long time.

Pastures.—Be careful not to feed too close. Top-dress in rainy weather with plaster, ashes, bone-dust, fish manure, guano, or any good fertilizer.

Grass Land.—The best time to manure grass land is as soon as the hay is off, and though "hand" fertilizers are best applied now, they have much more effect if well mixed with dry muck or soil, spread with a shovel from the tail of a cart, and brushed in. The best dressing for mowing lots or lawns is well-rotted barn-yard manure.

Hoeed Crops.—The pressure of other work leads often to neglect of these crops, and they are not so thoroughly weeded and attended to as they ought to be. For this reason every thing that can be hoeed by horse-power should be. Corn that may be in danger of neglect should be in rows both ways, so that there will be little work for the hand-hoes. The rows of Swedish turnips, beets, etc., should, on the same principle, be wide apart, so that the horse-hoe may be used freely.

Corn.—Stop hoeing as soon as the ground is well shaded. The plow may still be used with care, for the sake of loosening the soil; and the little one-horse subsoil plow is often run between the rows, if you have a strong horse, with great advantage, especially in dry weather.

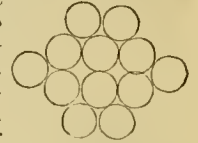
Forage Crops to be Sown in August.—Indian corn is probably the best crop for obtaining a supply of green or dry forage for neat cattle, provided the soil is rich. On light, pretty good soils turnips may be sown thickly, and give an abundant and excellent green fodder. Peas may be sown alone or with oats, and furnish nutritious green forage for hogs, horses, sheep, or cows. Hungarian grass may be put upon inferior, dry ground, and yield a good crop of excellent hay; or it may be fed green, or, if desired, allowed to ripen seed, which it yields abundantly, and is excellent for horses, sheep, or poultry.

Potatoes ought not to be disturbed after the tubers have begun to form. With the early sorts this takes place early, but with the late ones not before the middle of this month. After the tops interfere with the use of the cultivator, turn a light furrow towards the hills, and leave them, pulling weeds by hand as they appear through the season.

Turnips.—Sow Swedes early in the month on good mellow soil. Common turnips may be sown any time during the month. It is best to sow in drills, putting in superphosphate with the seed, at the rate of about 200 lbs. to 300 lbs. per acre.

Summer-fallows, if to be of real advantage, must be plowed and harrowed after rains, and during dry weather, so as to kill weed seeds, mellow the clods, and give all parts of the surface soil the benefits of sun, air, dew, rain, and harrow teeth.

Sheep.—See that the feed is abundant, and that



the winter supply holds good in dry weather. Salt regularly. Old ewes fatten faster in hot than cool weather, and may be fed grain to advantage.

Swine.—Feed peas as soon as they are fit; give breeding sows the range of the orchard, or some other piece of land, where they can get all the green feed they need; otherwise, cut and feed green clover, corn sowed for fodder, or grass, daily.

Cows need some succulent green food, and the best is corn fodder, cut in the forenoon, and fed at night or the next day. Yard the cows at night, and give them a good feed of corn fodder, and the manure will pay for the trouble twice over.

Fowls.—Chickens hatched after this will rarely or never be of full size. Parasitic vermin increase greatly in hot weather. Keep good dusting baths for fowls, adding wood ashes and sulphur.

Weeds.—Let none go to seed. Easier said than done, but do it if you can. We use a heavy hoe, 2 inches wide, 6 inches long, and sharp. It will cut off a dock root three inches under ground at one blow, and it is fun to use it where the weeds are not too plenty. Dock that is pulled or cut in blossom will mature every seed, we think; so will many other weeds. Lay such in heaps, and when dry, burn them.

Work in the Horticultural Departments.

Our text this month is "weeds." Not but what they are to be fought in other months, but in these scorching days it is a peculiar satisfaction to use the weeding implements; there are now no spring showers to make the weeds start all the better for a transplanting, but once uproot them, whether with the cultivator, hoe, or rake, and they immediately perish. It cannot be too frequently repeated that it is easier to destroy weeds when they mere seedlings, than after they become well established.

Orchard and Nursery.

Mulch, if to be of benefit, should be applied before the drying heats come on. It is intended to preserve the moisture already in the soil, and should be put on before any great amount of drying has taken place. If the soil is kept mellow, the light surface soil answers as a mulch.

Thinning should have been attended to earlier, but it is better to do it now than to neglect it altogether. Those pears which grow in clusters are especially benefited by removing one-half or two-thirds. The Seckel, which is ordinarily a very small pear, may be had of very respectable size by severe thinning, and pears which are ordinarily large may be made of "exhibition" size by the same process. Every commission merchant will say that one basket of first-class fruit will bring more than two of ordinary quality.

Peaches.—It promises to be a great season for peaches, and the prices will probably be low. Those who exercise the most care and judgment in packing will get the best returns. Send select fruit only, should the season prove an abundant one, and feed all inferior stuff to the pigs, or put it in the manure heap. When fruit is plenty, it will not do to pay freight on that of inferior quality.

Cherries have set well; but as far as our observation goes, they have been badly stung by the curculio, and are disposed to rot. We do not generally at the East look for an abundant crop. Those who are fortunate enough to have cherries to market should have them carefully picked, and provide such ladders as will allow the fruit to be gathered without injury to the trees.

Pruning is now done on the young wood, and will save a great deal of sawing and cutting hereafter. The young shoots which grow where branches are not wanted are now readily removed. Old growths may now be removed, taking care to leave a smooth wound to heal over.

Budding is to be done whenever well-matured buds can be had, and the bark of the stock "runs" or parts freely from the wood.

Black Knot.—No remedy has been found for this bane to plum and cherry trees other than the knife,

If it appears on a large limb, cut it out; if on a small one, cut it off; at any rate, do not let it remain, if it requires the destruction of the whole tree.

Insects will still need attention. See that the borers do not penetrate the tree. If the eggs have been laid, rubbing with a corn-cob will kill them. If the grubs have already gained an entrance, the fact may be discovered, and they can be easily dug out by the use of the knife. Keep a look-out for the late caterpillars which prey upon the leaves. It is often better to sacrifice a branch upon which leaf-eating caterpillars have established themselves, than to let them spread to the whole tree. Visit the orchard frequently, and see what the many insect enemies are doing.

Cherry and Peach Stones.—Collect them from healthy trees only, and put them in sand at once. If allowed to get dry, neither will germinate.

Fruit Garden.

Those who market fruits should read the articles which we have from time to time published. All that has been said about strawberries applies to the later fruits. Send the best. The condition of ripeness is governed by the distance from market.

Blackberries.—The New Rochelle is a nuisance, as it is never ripe when it is black; yet when it does not winter-kill, it is a profitable variety, but one which we would not recommend for family use. Well grown and well ripened it is really fine, but we can grow the Kittafinny and the Wilson with the assurance that we shall get a crop of fruit every year. Remove the old canes as soon as the fruit is gathered. Pinch the side shoots to 18 inches.

Raspberries.—As the old wood will die out at any rate, it is best to remove it at once. Hoe off all suckers that are not needed for propagation.

Strawberries.—See article on page 258, on Strawberries in Pots. If runners have become well rooted without pots, they may be taken up carefully and put where they are to fruit.

Grape Vines.—The laterals will now be pushing vigorously. Pinch their growth back to one leaf. Do not let young vines overbear. One bunch to the shoot is sufficient. Keep all vines, young or old, tied up to a stake or trellis, and keep off all volunteer shoots.

Kitchen Garden.

Asparagus.—The bed is now usually neglected, but really the best time to apply fertilizers is while the plant is making its growth. We shall give ours a good dressing of superphosphate.

Beans of the bush sorts may still be planted for late use and for pickles. Pinch Limas when they reach the top of the pole.

Beets may still be sown with the prospect of a fair crop. Thin the earlier plantings as needed.

Cabbages and Cauliflowers.—The later sorts may be set out from the seed-bed. Keep the ground well stirred among them.

Carrots.—Continue to work between the rows until the leaves are so large as to prevent it.

Celery.—Set out from the seed-bed, putting the rows 3 feet apart and the plants 6 inches in the rows. Press the soil firmly about the roots.

Corn.—The early sorts, if planted now, will give a late supply for use and for drying.

Egg Plants need frequent hoeing, and when fairly started, it will pay to give them liquid manure. The fruit should not be allowed to rest upon the ground, but have a wisp of straw put under it.

Endive.—Sow for a late supply. The earlier sown should be blanched when the plants are one foot in diameter. This may be done by gathering up the outer leaves, and tying them over the center of the plant, or by placing a board upon the plants to exclude the light.

Herbs.—Transplant sage, etc., from the seed-bed to the ground from which crops of peas, cabbages, and other early vegetables have been taken.

Leeks.—Transplant from seed-bed to rows one foot apart, setting the plants 6 inches apart.

Melons.—Keep well cultivated, and remove all fruit which sets too late to ripen.

Onions.—If there is a dear market, it will often pay better to send in the green onions in bunches than to wait until ripe. Keep free from weeds.

Peas.—Some of the early varieties may be planted as an experiment for a late crop. In most cases they mildew and become worthless.

Seeds.—Unless one can save the earliest and the best, he had better depend upon the seedsmen. It is useless to take the earliest cucumbers, tomatoes, etc., for the table, and then save seeds when these vegetables become plenty. It is better to set apart certain plants of these, and a row of peas and beans for seed; otherwise the variety will degenerate.

Sweet Potatoes.—In garden culture the ridges can be kept clean by the use of a sharp steel rake. Do not allow the vines to take root.

Squashes should be allowed to root at the joints, and the whole ground should be well manured. The black Squash-bug is best destroyed by hand-picking. The eggs, which are deposited on the under side of the leaves, can be readily crushed.

Tomatoes.—In garden culture it is best to give the vines some support, to keep the fruit from the ground. Rails may be supported upon crotched stakes, or a row of brush may be placed for them. When the trouble can be taken, it is a very neat way to make a wire trellis and train the vines to it.

Weeds in these hot days die readily if once uprooted. Keep some kind of weeding implement constantly at work between the rows.

Flower Garden and Lawn.

Lawns, if frequently cut, will keep velvety. Root out all coarse weeds as soon as they are discovered. Keep the margins, where they border on a road or path, neatly trimmed.

Climbers.—See that those which need the attention are properly tied to the trellis. Do not allow the new growth of climbing roses to become cramped and distorted, as it often will if it has to struggle amongst the old stems.

Bulbs.—As soon as the foliage of tulips, etc., begins to wilt, lift the bulbs and lay them under cover to ripen off; then store them in a cool, dry place until time to plant in fall.

Gladolus.—The tall growing sorts will need stakes, and they are worth the trouble.

Lilies.—Look out for the caterpillars which work at the under side of the leaves. Their presence is manifested by a transparent spot in the leaf. Hand-pick them. Stake those which need it.

Coleus, now so much used for its ornamental foliage, should be kept dense and bushy. No plant bears cutting back more kindly.

Annals.—Transplant those large enough, and sow the quick growing ones for a late bloom.

Perennials.—Sow the seeds as soon as ripe; they germinate with greater certainty than if kept until spring, and the plants will usually become strong enough to bloom next year.

Roses may be layered in pots of good compost sunk in the soil. This affords to the amateur a ready means of increasing his stock.

Green-house and Window Plants.

Plants out of doors should not be neglected. They often suffer for water, and some make a rapid growth that should be controlled. . . . Camellias and other evergreens need shade from the hot sun. A lattice-work answers the purpose. . . . Plants in the house will also need shading, either by a muslin screen, or by whitewashing the glass. . . . The sooner the houses or heating apparatus are put in order, and all needed repairs made, the better.

Industrial Exhibition in California.

The Mechanics Institute of San Francisco will hold an exhibition at that City, commencing on the 14th of Sept. next. All the world, including "China, Japan, Hawaiian Islands, British Columbia, Mexico, Chili, and Peru," has been invited to exhibit, and a great time may be expected. Mr. A. S. Hallidie is the President,

AMERICAN AGRICULTURIST.

ORANGE JUDD & Co., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies: Four to nine copies, \$1.25 each: Ten to nineteen copies, \$1.20 each: Twenty copies and upwards, \$1 each. Papers are addressed to each name.

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This number begins the Second Half of the Volume, and the present is a favorable time for new subscribers to begin a trial of the paper. We will this month receive six months subscriptions, from July to December, inclusive, at half the annual rates, viz. 75 cents each, or four copies \$2.50; or ten copies for \$6 00, that is, 60 cents each. Will our friends please mention this matter to their neighbors? There are many who are not ready, or not willing to venture a whole year's subscription to start with, who would be willing to try it half a year, if the idea were suggested to them. We trust there are very few who have not got their money's worth during the past six months. The last half of the volume will certainly be equal to the first half. Between now and the end of the year we shall publish about 264 of our large pages, and from 250 to 300 Engravings, some of which will be large, and very beautiful and interesting, and all will be valuable. The immense number of copies printed enables us to furnish a large amount of carefully prepared reading matter, and expend a great deal on illustrations, and yet supply the paper on these low terms. The reading matter in a single half year is equal in amount to two or three books costing \$1.50 to \$2.00 each, and the engravings costing us \$5,000 to \$6,000, are supplied to each reader for only 75 cents, or three or four for every penny of subscription,—and cheaper still to clubs of subscribers. We shall be happy to receive at least one addition from every present subscriber.

Commercial Matters—Market Prices.

Gold has been decidedly more actively dealt in at much higher rates, but closes less buoyantly at 139 1/2.... The offerings of Flour and Wheat have been more liberal, and prices have been depressed, though the demand has been good, largely for the common grades of Flour, and for Spring Wheat for export, the market closing heavily for both Flour and Wheat. Corn and Oats have been variable in price, and in quite active request, as a rule, the former closing in favor of sellers, and the latter with a downward tendency. Rye has declined materially, but at the reduced rates has been more sought after, chiefly by export buyers.... Cotton has been in brisk request, chiefly for home use, at a sharp advance in prices.... Provisions have been more inquired for, and hog products have been quoted higher. Butter and cheese have been quoted cheaper, with more liberal supplies available.... Wool has been less sought after, though offered freely at yielding prices.... There has been more activity in Tobacco, which has been quoted firm.... Hay and Hops have attracted more attention.... Seeds very dull. The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist,

show at a glance the transactions for the month ending June 14, 1869, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW-YORK MARKETS. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 27 days this m'th. 3,000,000 2,263,000 1,281,000 124,000 43,000 916,000 26 days last m'th. 1,820,000 2,871,000 541,000 11,000 41,000 237,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats. 27 days this m'th. 2,418,500 2,119,000 1,516,000 107,000 31,000 1,238,000 26 days last m'th. 2,175,500 1,098,000 1,448,500 76,500 121,000 986,000

2. Comparison with same period at this time last year. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 27 days 1869. 3,000,000 2,263,000 1,281,000 124,000 43,000 916,000 26 days 1868. 1,820,000 2,871,000 541,000 11,000 41,000 237,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats. 27 days 1869. 2,418,500 2,119,000 1,516,000 107,000 31,000 1,238,000 26 days 1868. 2,175,500 1,098,000 1,448,500 76,500 121,000 986,000

3. Exports from New York, Jan. 1 to June 12: Flour, Wheat, Corn, Rye, Barley, Oats. 1869. 420,201 3,802,530 1,328,869 40,401 1868. 403,556 2,580,805 3,549,097 153,093 89,008

4. Stock of grain in store at New York: Wheat, Corn, Rye, Barley, Oats, Malt. 1869. June 7. 637,877 385,241 107,546 283 555,993 109,746 June 11. 1,056,048 394,156 107,502 17,684 613,166 77,677 Apr. 10. 1,681,633 1,080,769 165,008 48,281 1,138,740 66,664 March 12. 1,490,416 1,302,467 2,830,816 15,616 2,000,457 50,095 Feb. 10. 2,708,609 1,407,616 233,182 91,384 2,330,239 28,034 Jan. 13. 3,524,172 1,509,233 263,260 54,740 2,864,351 236,001

5. Receipts at head of tide water at Albany each season to June 8th: Flour, Wheat, Corn, Rye, Barley, Oats. 1869. 28,500 1,534,000 718,000 124,400 11,800 519,600 1868. 65,709 3,881,900 3,397,400 119,300 336,300 1,864,800 1867. 17,100 2,700 59,100 28,000 38,200 276,500 1866. 34,900 317,200 2,090,700 64,200 41,700 898,700 1865. 91,100 547,900 731,800 51,000 114,300 1,944,300

CURRENT WHOLESALE PRICES. May 14, 1869. June 14, 1869. PRICE OF GOLD. FLOUR—Super to Extra State \$5 70 @ 7 10 4 60 @ 6 45 Super to Extra Western 6 50 @ 12 75 6 10 @ 12 75 Extra Western 6 50 @ 12 75 6 10 @ 12 75 Extra Genesee 7 10 @ 9 75 7 00 @ 9 25 Superfine Western 5 70 @ 6 10 4 60 @ 5 15 RYE FLOUR 4 65 @ 6 85 4 25 @ 6 50 CORN MEAL 4 35 @ 4 90 4 00 @ 4 65 WHEAT—All kinds of White 1 65 @ 1 90 1 45 @ 2 00 All kinds of Red and Amber 1 35 @ 1 60 1 25 @ 1 60 CORN—Yellow 86 @ 90 85 @ 1 00 Mixed 80 @ 87 1/2 65 @ 1 00 OATS—Western 85 @ 86 1/2 79 @ 82 State 80 @ 81 1/2 75 @ 80 RYE 1 83 @ 1 85 1 15 @ 1 20 BARLEY 1 75 @ 1 80 1 10 @ 1 15 HAY—100 lb. 60 @ 1 25 55 @ 1 10 STRAW, 1/2 100 lb. 80 @ 1 15 70 @ 1 10 COTTON—Middling, 1/2 lb. 28 1/2 @ 29 1/2 31 1/2 @ 32 HOPS—Crop of 1868, 1/2 lb. 5 @ 10 5 @ 10 FEATHERS—Live Geese, 1/2 lb. 75 @ 85 87 @ 95 SILD—Clover, 1/2 lb. 1 75 @ 1 85 1 35 @ 1 40 TIMOTHY, 1/2 bushel 3 75 @ 4 25 3 05 @ 4 00 PHX, 1/2 bushel 2 60 @ 2 75 2 45 @ 2 60 SUGAR—Brown, 1/2 lb. 10 1/2 @ 13 1/2 10 1/2 @ 13 1/2 Molasses, Cuba, 1/2 gal 35 @ 60 35 @ 60 COFFEE—Rio, (Gold, in bond) 9 1/2 @ 16 8 1/2 @ 12 1/2 Tobacco, Kentucky, &c., 1/2 lb. 5 @ 16 5 1/2 @ 17 Seed Leaf, 1/2 lb. 8 @ 75 8 @ 75 Wool—Domestic Fleeces, 1/2 lb. 4 5 @ 60 4 8 @ 60 Domestic, pulled, 1/2 lb. 3 3 @ 47 3 2 @ 47 California, unwashed, 2 2 @ 35 2 1 @ 35 TALLOW, 1/2 lb. 11 1/2 @ 11 1/2 11 1/2 @ 11 1/2 OIL—LAMP—1/2 lb. 49 50 @ 63 00 50 00 @ 61 00 LARD—Mess, 1/2 barrel 75 @ 81 50 31 50 @ 32 75 Prime, 1/2 barrel 25 @ 26 00 25 00 @ 26 50 BEEF—Plain mess 8 00 @ 16 00 8 00 @ 16 00 LARD, in tins, 1/2 barrel, 1/2 lb. 16 1/2 @ 18 1/2 17 1/2 @ 19 1/2 BUTTER—Western, 1/2 lb. 23 @ 33 20 @ 35 State, 1/2 lb. 35 @ 43 30 @ 38 CHEESE 10 @ 23 6 @ 21 BEANS—1/2 bushel 2 25 @ 2 50 2 25 @ 2 50 Peas—Canada, 1/2 lb. 1 50 @ 1 55 1 45 @ 1 55 EGGS—Fresh, 1/2 dozen 14 @ 19 17 @ 21 WILD PIGEONS—1/2 dozen 10 @ 15 7 1/2 @ 10 00 POULTRY—Fowls, 1/2 lb. 32 @ 34 15 @ 17 Turkeys, 1/2 lb. 22 @ 24 18 @ 19 POTATOES, Old—1/2 bbl. 1 00 @ 2 35 1 00 @ 2 50 POTATOES, New—1/2 bbl. 1 00 @ 4 00 1 00 @ 4 00 APPLES—1/2 barrel 5 50 @ 7 00 5 00 @ 7 50 SWEET POTATOES, 1/2 bbl. 1 00 @ 1 00 1 00 @ 1 00 TURNIPS—100 bunches 1 00 @ 1 00 3 25 @ 5 50 CABBAGES—100 8 00 @ 15 00 3 00 @ 5 00 ONIONS—1/2 bbl. 1 50 @ 2 00 1 50 @ 2 00 GREEN PEAS—1/2 bbl. 1 00 @ 1 50 1 00 @ 1 50 TOMATOES, Brimble, 1/2 crate 1 00 @ 1 50 1 00 @ 1 50 STRAWBERRIES—1/2 quart 35 @ 75 6 @ 15 SQUASHES—1/2 bbl. 1 00 @ 2 50 1 00 @ 4 00 RIBBONS—100 bunches 1 00 @ 1 50 1 00 @ 3 50 CUCUMBERS—1/2 crate 1 00 @ 1 25 1 00 @ 3 00

New York Live Stock Markets.

WEEK ENDING. Bees, Cows, Calves, Sheep, Swine, Total. July 10th. 5,677 2,164 18,500 22,417 49,100 do. 21th. 6,824 67 3,470 20,732 22,691 53,592 do. 31st. 5,981 79 2,472 19,162 20,266 47,796 June 7th. 6,654 54 2,569 9,927 27,972 46,576 do. 14th. 7,366 96 2,914 91,969 27,601 63,216 Total in 5 Weeks. 31,902 367 13,189 94,311 130,437 257,050 do. for prev. 4 Weeks 25,592 271 8,571 77,490 181,819 Average per Week. 6,380 73 2,637 18,566 21,087 do. do. last Month. 5,368 68 2,248 18,171 19,372 do. do. prev. Month. 5,839 84 1,069 21,209 25,117 Average per Week. 5,433 105 1,583 27,182 18,809 do. do. do. 1867. 5,511 61 1,320 22,154 20,605 do. do. do. 1866. 5,748 94 1,200 20,000 13,000 do. do. do. 1865. 5,255 118 1,500 16,091 11,023 do. do. do. 1864. 5,161 115 1,511 14,470 9,801 Total in 1868. 298,738 5,466 22,571 1,413,470 1,102,613 Total in 1867. 293,880 3,399 69,911 1,174,151 1,010,000 Total in 1866. 278,274 6,161 77,991 826,733 573,190 Total in 1865. 267,009 7,003 75,921 875,462 660,277

There has been a moderate supply of beef all the month, and the market kept steady. The losses sustained by some dealers last month made them more careful about paying high prices for cattle at the West, and more cheerfulness was manifest among them. Butchers grumbled somewhat at the advance of 1/2 c. per pound for the same quality over the prices paid last month, but drovers were firm and they had to pay or go without stock. There were not as many large, heavy cattle for sale as we found last month, and the advance seemed to be on medium rather than on the fat, heavy bullocks. Good, sleek three and four-year-old steers, if they are not bony, are what our butchers like, and such always sell readily and quickly. There has been some call for grazing cattle from feeders, and few sales were made at about 15c. per pound, live weight. The following list gives the range of prices, average price, and figures at which the largest sales were made.

May 17, ranged 12 @ 17c. Av. 15 1/2 c. Largest sales 14 @ 16 do. 21th do. 14 @ 16c. do. 15c. do. do. 14 1/2 @ 16 do. 31st do. 14 @ 16 1/2 c. do. 15 1/2 c. do. do. 14 1/2 @ 16 June 7th do. 12 1/2 @ 16c. do. 11 1/2 c. do. do. 14 @ 15 1/2 do. 14th do. 12 1/2 @ 16c. do. 11 1/2 c. do. do. 14 @ 15 1/2 The advance of 1/2 c. per pound on beef will not hold long, as the abundance of small fruits and green vegetables just now makes dressed meat sell slowly. The butchers say their stalls are full and for the week ending June 14th sales of live-stock dragged a little. Drovers will do well to heed the warning before they get their fingers burned... MILK COWS.—Poor milkers are still in excess and a drug on the market. But few sales reach above \$80, for good cows, while poor ones sell for \$50 or less. The highest price paid this month was \$110 for a "fancy cow." Good milkers are what are wanted in the market, and we hope to see more of them. Prices range from \$50 to \$95, depending upon quality.... VEAL CALVES.—The run has been light all the month, and with the advance in beef, fat calves have gone up a step, with quick sales. Prime Jersey Veals are selling at 11c. with a few very fat as high as 11 1/2 c. per lb., live weight. Medium sell at 9 1/2 c. @ 10c., while buttermilk calves sell at 6c. @ 7c. There are but few sales by the head.... SHEEP.—There has been a decided filling off in numbers in this department. Drovers have lost a great deal of money this past winter and spring, on sheep and lambs, and they are trying to make up their loss by shutting off the supply. The advance may be set down at about 1/2 c. per lb. Good sheep sell at from 6c. @ 7 1/2 c.; medium from 5 1/2 c. down to 4c. per lb. Lambs range from 12 1/2 c. @ 11c.; a few very extra sold as high as 14 1/2 c.,.... SWINE have been plenty and the arrivals steady. Most of them go at once to the slaughterers and but few sales are made on foot. Dressed they sell for 11 1/2 c. @ 11 1/2 c. per lb., a decline of about 1c. from last month's prices.



containing a great variety of Items, including many good Hints and Suggestions which are thrown into smaller type and condensed form, for want of space elsewhere.

Postage.—To our published terms for the American Agriculturist, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be prepaid at the Post-office where the paper is received.

How to Remit:—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of Orange Judd & Co.

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect Oct. 1, 1868, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the Registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Dry and affix the stamps both for postage and registry, put in the money, and seal the letter in the presence of the postmaster, and take his receipt for it. Letters thus sent to us are at our risk.

Bound Copies of Volume XXVII (1868) are now ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (16 to 26) will be forwarded at the same price. Sets

of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume, (50 cents extra if returned by mail.) Missing numbers supplied at 12c. each.

The Approaching Fairs and Cattle Shows.—It is very desirable that we should be informed early when and where the various shows of the whole country are to be held, in order that, going to press as we do weeks in advance of the date of the issue, we may prepare as complete lists as possible. Please send premium lists as soon as out, newspaper notices, marked, or information by letter—any thing that will give us the name of the Fair, the Town, County, and State, where it is held, and the responsible business man. Don't forget the State; many of the printed premium lists do not mention it, and it is often impossible to locate an important fair on this account. Another thing. Don't think "somebody must have sent the *Agriculturist* a notice," but mail one at once, and then you know it is done.

Potato Essays.—The prizes for Essays upon potato culture offered by the Rev. W. T. Wiley, as announced in April last, will not be awarded until September next. Essays may be sent to the care of B. K. Bliss & Son, 41 Park Row, New York.

Photographs of Cattle.—Capt. W. P. Anderson, of Cincinnati, O., sends us some fine large portraits of his Jersey stock. The cow Daffodil was imported from the Queen's herd at Windsor. Beauty Blucher is a fine heifer, and Buttercup Blucher, another heifer, makes a most pleasing picture. The animal is held by the Captain's little boy, who for the occasion, wears his father's hat. His expression at the ludicrousness of the situation is admirably rendered by the photograph.

A Great Cattle Show at Altona.—Altona is a city of Holstein, lying on the Elbe, about two miles from the city of Hamburg. It is of as convenient access to the whole civilized world as could be desired. Here a cattle show, open to the live-stock of all countries, is announced for the 3d to the 7th of September next, to be held in connection with a general exhibition of industry at the same place, continuing from the 27th of August to September 13th, as already announced. The prizes for live-stock are liberal, and the rules and programme of the exhibition are such, we judge, as will give satisfaction, and secure equitable awards. This show offers to travelers on the continent an excellent opportunity to study the Holstein breeds of neat cattle. In the premium list which we have received in English, there are no less than four of the large native breeds of "Marsh" cattle enumerated, besides the Middle and Highland breeds. Applications are to be made to the Secretary, Director A. Schaffers, No. 110 Königs-strasse, Altona, and we presume the Prussian Consul in New York will furnish information and premium lists.

The Reconstructed Farmer.—In a notice of this journal on another page, we omitted to say that it is published at Tarboro', N. C., at \$2.00 a year.

Pondrette with Dry Earth.—We have never seen anything by the name of Pondrette in market, or the same thing sold under other names, which was worth much, if any, more than barn-yard manure; but every man may utilize the night-soil of his own establishment, if he will, by mixing it continually with dried earth, and have a pondrette of great excellence for home use. The employment of charcoal dust with night-soil as a deodorizer should always be avoided, as a loss of ammonia almost always ensues.

Mrs. Lilly M. Spencer and her Pictures.—The beautiful engraving called "Take your Choice" on page 264 is from a painting by Mrs. Lilly M. Spencer, a lady who has won an honorable name in art. Though of a poetic imagination, and the author of many paintings which comprise classical and allegorical subjects, she is best known for her pictures of domestic life. Her works of this class have been reproduced in colored lithographs and other forms, and through these her name has become a familiar one throughout the country. Finding that pictures of a domestic character with something of the humorous in them were more popular than those to which her natural tastes inclined her, Mrs. S. for some years painted such subjects almost exclusively. Her "Snake Hands," "Jolly Washerwoman," "The Gossips," and others, are known to all lovers of pictures. They are full of life and meaning, and at the same time finished with an accuracy and detail that few artists attempt. The engraving given on another page shows how capably Mrs. Spencer introduces children into her pictures. In another picture called "Dandelion Time," she represents three children and a huge Newfoundland dog, which is decked with a dandelion wreath. The whole subject is so pleasing and so well treated that the pub-

lishers of the *Agriculturist* are about to issue it as a chromo, which will be announced as soon as ready. Mrs. S. at present has her studio in N. Y. City, where she is successfully engaged in portrait painting, and at the same time is producing other pictures. Among her latest productions are "War Times at Home," "The Home of the Red, White and Blue," "The Starry Flag," "Beauty to the Brave," etc. Her greatest work, and one highly commended by those who have seen it, is a large allegorical picture called "Truth unveiling Falsehood." It contains six figures of life size, and is considered by good judges to show great power in its conception as well as skill in the execution.

"Five Acres too Much."—By Robert B. Roosevelt. Pp. 210. N. Y.: Harper & Bros. An injunction should be put upon the sale of this book, for we consider it a dangerous thing to be let loose upon the community. This opinion is formed from its effect upon ourselves. Though progressive in most matters, we have some old foggy notions about books and one of these is to read them before noticing them. We read "Five Acres too Much," and when we laid it down felt as lame and sore as if we had done a hard day's work at mowing or rowing. Is a book which makes one laugh until he cries, laugh until he is tired and cannot laugh any more, a safe thing? We call the attention of the Board of Health to the Harpers, and give ours to the book. It is the story of a city lawyer who went to the country to farm it on five acres, and contains an account of the blunders of a novice. There is a perfect breeze of fun through the whole, not boisterous fun, but charming and irresistible, and it is marked by a genial appreciation of the ludicrous. We have not for a long time been so thoroughly amused as in reading this book, and laughed none the less at the gentle digs he gives us as editors in general, and of the *Agriculturist* in particular. Flushing is the scene of our author's exploits in horticulture, and as our Senior Publisher is the Chief Magistrate of that town, we hope he will haul Mr. R. over the coals for some of his detracting remarks concerning that beautiful place. We don't think he has injured it much, however, and any sensible man will consider it an additional inducement to live in Flushing now that he knows so clever a person as the author lives there on "five acres too much." Price by mail \$1.50.

Bull Harness.—We would be glad to receive drawings and descriptions, either or both, of good, practical ways of harnessing a single bull for work at plowing or in a wagon or cart.

The Mexican Everbearing Strawberry just now occupies the attention of our Western exchanges, some strongly advocating its claims and others denouncing it as a "transparent humbug." We briefly answer numerous letters in regard to it. The same thing was exhibited at the N. Y. State Fair last fall as the "Maximilian," and was decided by the fruit committee to be only the old Bash Alpine. We saw the plants, and at the time thought that the committee were right. Since then our friend Judge Geo. W. Clinton, of Buffalo, N. Y., has named this strawberry as a new species and calls it *Fragaria Gilmanii*. While we would give all deference to Judge Clinton, we think he has been hasty, as we fail to see in the characters he has given anything that makes a very distinct variety of this plant, letting alone the question of its being a distinct species. We have the plant in cultivation, obtained from head-quarters, and shall be able to determine if it is as good as, or better than, the Alpines we have already. From the manner in which the plant was first introduced, and its change of name, it would take a very strong affidavit to make us believe that it ever came from Mexico at all.

Horticultural Patents.—Mr. E. H. Reihl, at a meeting of the Alton Horticultural Society, gave a hard hit at some of those who have patented processes in horticulture. He finds that grape cuttings upon a sunny and sandy slope root earlier than elsewhere, and proposes to get out a patent to prevent others from using soils which are similarly favorably situated. He also has a cellar which keeps his cuttings at the right temperature and moisture, and proposes to patent that also. Mr. Reihl proposes all this in burlesque, but if he were to go to the patent office we have no doubt he could get a patent. Things more ridiculous than these are patented.

Plants Named.—At this season we have numerous favors in the way of plants to be named. We wish our friends to understand that it is generally difficult to name plants from leaves only. The flower, leaf, and, where possible, the more or less developed seed pod or fruit should be enclosed. Moreover, we cannot undertake to name things put together promiscuously. If one sends us four or six specimens in a lump without designating them by numbers, we cannot give space to de-

scribe them so that the sender can know which is which. ... R. J. R., Midway, Ky. No. 1 is our native *Wistaria*, *Wistaria frutescens*, a very excellent climber to cultivate; No. 2 is probably a Trumpet Creeper, but the materials are insufficient. ... Michael Eberhard, Jr., Clayton Co., Iowa. Probably the American Cowslip or Shooting Star, *Dodecatheon Meadia*; but you should send more than a solitary flower. ... G. W. C., Parkersville, Tenn. The plant known to you as "Purple Shade," is the Feathered Hyacinth, *Muscari comosum*. ... S. B. W., Columbia, Conn. The flowers which puzzled the ladies are those of the Fringed Polygala, *Polygala paucifolia*, one of the most beautiful of our early spring plants. ... Jas. J. Strong, Benton Co., Mo. The plant, the "root of which contains a paint," is the Hoary Peccoon or Alkanet, *Lithospermum canescens*. The root was formerly used by the Indians as a paint and dye. ... E. A. E., Anson Co., N. C. The "grass" sent is not a grass proper, but a sedge. It is some species of *Cyperus*, but too young to determine. None of this family are of value as fodder, though they are useful as bedding and in the manure heap. ... Thos. Middleton, Mason Co., West Va. No. 1 is the Cruceball, *Geranium maculatum*, figured in June last; No. 2 is a Phlox, probably *Phlox diaricata*; but how can one tell from such a small snip?

Sassafras Shoots Troublesome Weeds.—"E. P. K." asks: "Can you give me a sure method of eradicated sassafras shoots?" They will not bear repeated plowings. The way to get rid of them is the one you suggest, viz., to "eradicate." After plowing, or even when plowing, let men follow the plow and pull out every root they see. We presume there is a market for the clean roots or bark, sufficient to pay the expenses of the job, or a good part of them at any rate. When those roots not seen show shoots, grub them out. The land may be put in corn or any good crop.

Sundry Humbugs.—We feel called upon to again warn all persons against the wicked transactions into which Gumbridge & Co. would entice them. Their "Fac-simile U. S. Treasury Notes" are nothing but reduced photographic copies of the genuine ones, and utterly worthless as money. No person, who has any regard for his own honor, would engage to take these notes from Gumbridge & Co., and we hope our readers will remember that both parties in such a transaction are equally culpable. ... The man who advertises as the "Howard Medical Association, Philadelphia," has taken upon himself the management of the health of a certain class of the community, and in a circular to his patients on "diet and self-management," he makes a mess of it surely. But this was to be expected. The treatment of the disease we consider erroneous, and the immoral tone of some parts of the circular objectionable. ... The "New York Jewelers' Co-operative Union" still keep at their "preliminary drawing." Messrs. C. C. Havens & Co., can't you get through this preliminary business and give us a taste of the regular thing? Some are getting tired of waiting! ... Messrs. H. M. Johnston & Co., New York, have gone into the lottery business. Their plan differs but little from other "Gift Lotteries." The holder must return the ticket to them inclosing \$1, within fifteen days, or lose his prize. We advise all ticket holders to keep their dollar and lose their prize, for if they send the money they will probably lose both. ... R. G. Barnwell, Philadelphia, is in the "oroide" watch business. The number given as his office is that of a flourishing daily paper, and no such person is known by any of the occupants of the building; so we infer that Mr. B. is no more reliable than his watches. Our opinion of the above-named watches has been sufficiently set forth. ... Mr. E. C. Allen, Augusta Me., is a great man. We have before us his descriptive catalogue, in which he proposes to teach those who will go to Maine and work for him, how to make "thirty-six valuable and best-selling articles of the day." This is not all; boys and girls can do it, and do it in the evening, and make from \$1 to \$5 a night at the business—a "grand inducement!" To those who cannot go to him he offers for sale the whole batch of receipts and instructions for \$2. Ah! now we begin to smell the rat. Mr. A. wants your \$2, and if you don't care to go the whole thing, he will send "Five Horse Tamer's secrets," for a dollar! We advise Mr. A. to get into some other business, or cover his tracks better; that thing won't work. ... A person calling himself A. G. Holman has been traveling through Ohio, representing that he is the proprietor or agent for disposing of the right to manufacture and sell self-raising flour prepared with Prof. Horsford's Patent Cream of Tartar substitute. He has usually sold the right for a certain sum, cash, and then given directions for preparing the flour, and prices for which the ingredients could be procured of "his agents" in Chicago, Cincinnati, or elsewhere. Some of the parties who bought rights ordered their ingredients of the firms referred to by Holman, and through them found that they

had been victimized. This man Hoioan has no connection with the proprietors of Horsford's patents, and all should beware of him. Western papers will do the public a favor by showing up Mr. A. G. Holman. . . . A very successful swindle was recently perpetrated in N. Y. City. An auctioneer advertised the sale of a quantity of unclaimed parcels from the office of Adams' Express Company. About two hundred of these packages were sold at prices ranging from \$5 to \$133. When the boxes and parcels were opened they were found to contain bricks, stones, pieces of iron, old clothes, a sheep's head, etc. Not one of the purchasers obtained anything of the slightest value. This buying of express and custom-house packages, as the boys swap jack-knives, "on sight unseen," is not rare in New York, and some sharper took advantage of it to make a nice little sum. The authorities could give no redress in the case. . . . Since the above with regard to Gambridge & Co. was in type, we have received the following in relation to a similar concern, which we print in full. "Ithaca, Ill. Dear Sir:—You will please show this Company to be cheats, in your paper. I sent them \$5.00 for counterfeit money, and they sent me these cards. If you know where I can get some of the right kind I will pay you for it. Yours resp'y, James Tripp."—Enclosed was a very neat card photograph of a \$500 U. S. Treasury Note, and the following circular from Hunter & Co., Hinsdale, N. H. "CONFIDENTIAL.—My Dear Sir: We have a large stock of exact copies of U. S. Treasury Notes on hand, made by men skilled in the art, which we desire immediately to dispose of, even if sacrificed. They are arranged in packages, each representing over \$500, in various denominations, so accurate as to be a perfect fac-simile of the genuine U. S. Note. We will not sell a package for less than \$15, upon receipt of which we will send it to you; or if you do not wish to trust us to this amount, we will send it to you on receipt of \$5; the balance, \$10, you can send to us as soon after you receive the package as possible. We trust partly to your honesty to do this, at the same time thinking that, as you will consider it to your interest to deal with us further, you will comply with our request. After you have ordered the package, any information we can afford will be cheerfully given. We would prefer to have the money sent by mail, registered, as it is less trouble, and saves both you and us the Express charges. If you desire to avail yourself of this opportunity you must do so at once, and address us carefully. You have our address. We offer special inducements to any one desirous of becoming our confidential Agent." . . . Now, James Tripp, are you not ashamed of yourself? You went into a dishonest speculation and got sold, and then ask us to expose those who cheated you. The best we can say of you, is, that you are a particularly mean scoundrel, and we advise you to reform your shaky morals as fast as possible. If any other fools or scoundrels get caught in a similar trap, don't let them come whining to us for redress; our verdict will be "sarve'd 'em right," and we shall publish their names, on the principle that the receiver is as bad as the thief. If there were no one willing to buy what is represented to be counterfeit money, the trade of Gambridge & Co., Hunter & Co., and others, would soon cease.

Self-milking Cow.—"B. B. McKeage."

—Make two strong wooden frames that will go easily on the cow's neck, and fasten them twelve to fourteen inches apart on her neck by rings, like chair or ladder rungs, pinned into the frames. This she will have to wear until the habit is cured, and she will not be able to get her head round to her side for any purpose.

Cure for Lice on Cattle.—Joseph Graner, Oneida Co., N. Y. We have repeatedly recommended the carbolic acid soaps and compounds for the destruction of lice on cattle, and have used it for other animal parasites, and have yet to hear of a case where it was properly applied and failed to give satisfaction.

The Smallest Calf.—Geo. F. Linsell, of Fayetteville, N. Y., reports to the *Agriculturist* a calf dropped on the farm of John Bender, which, though but 20 inches high and weighing 22 pounds, was as bright and sprightly as any calf. Is this a rare occurrence?

Feeding Cows.—"A Boy Farmer" can find no one to tell him how much corn meal one can profitably feed a cow per day. The answer depends upon whether the cow is being fattened or is kept for milk. If fattening, she should be gradually accustomed to eat more and more, so long as she shows a sharp appetite, good health, and gains steadily. The amount a cow can and will eat depends much upon her size. A large cow would probably eat half a bushel of meal a day for some time. It would never be profitable to feed a milch cow so much. Her feed should be increased until she shows a tendency to run too much to fat. This will vary with different cows on good pasturage, and may safely be put

down as from 4 to 10 quarts per day. A bushel of Indian meal weighs 50 pounds by law, in most States.

"Personal Knowledge."—"West Va." It is quite out of the question for us to name in the *Agriculturist* those breeders whose stock we think is the best or who are themselves the "most reliable within our personal knowledge." It is a very delicate matter for us to give this information personally, and it could not be done promiscuously without giving just grounds for offence. We may prefer one man's hogs or sheep to another's, and an equally good or better judge may take a different view. If we can help it, we allow no inferior stock and nothing liable to deceive to be advertised in the *Agriculturist*. Therefore to our advertising pages we can confidently recommend our readers.

Trouble in Milking.—"T. M.," of Marion, Iowa, writes: "I have a cow whose milk, when I press the teats hard, flows out in a scattered stream, so that, unless I hold the bucket or cup very near, a good part of the milk is wasted. What can I do?"—Examine the orifices of the teats carefully, and see if little warts or excrescences do not grow in them. If so, see how they can be removed. The trouble is probably just at the orifice, and we would not hesitate to attempt burning off the warts with *lunar caustic*, applied slightly moistened or in strong solution. The caustic would have to be applied every few days until a cure was effected.

Lime or Gypsum?—A correspondent asks which is the more beneficial to land—lime or plaster in equal quantities. We will ask him which is the more valuable—a horse worth \$200, or a wagon worth the same amount? The two articles are quite different in their nature and uses.

Concrete Walls as Fences.—Concrete will make a good and lasting fence if well capped or finished off roof-shaped, to shed rain. We have seen such a wall that stood well through severe winters, but how it will stand on land very much moved by the frost we cannot say. Perhaps some of our readers can.

Clover with Peas.—"E. M. M.," Isle of Wight Co., Va., has seven acres in oats, which will be harvested before the middle of July; they will be followed immediately by black peas. The question is—"Would it be risky to sow clover with the expectation of a stand next spring?" There will be no trouble unless the pea crop is so heavy that the clover is smothered. The stand, next spring, will depend upon the richness of the land, however. On rich ground, clover sown in the spring will often make stand enough in the fall to cut a ton and a half to the acre.

Red Sorrel.—U. C. Rutter.—"The best, cheapest, speediest, and most effectual way of getting rid of red sorrel" is, without doubt, to put hoed crops on the land, and keep them very clean for several years before seeding down. Try plowing this fall, potatoes next year; fall plowing, and potatoes again; fall plowing again, and roots; sugar beets, parsnips, or carrots, if the soil is deep enough, and well manured; fall plowing again, and spring grain, with clover and grass.

Ville's New System.—"H. W. Morrow, Richmond Co., Va., asks for our opinion of Professor Ville's new system.—Well, it is not new, though Professor Ville takes a little different view of the principles and practice of good farming from that usually taken. We all know that ordinary land, if well supplied with his four elements of fertility, in connection with enough of humus or organic matter, will be very fertile for a long time, perhaps for thousands of years. Lime, potash, ammonia, and phosphoric acid, are the only ingredients of manures which have or have ever had a definite market value, and a certain agricultural value. Gypsum, salt, Glander's salts, green vitriol, and many other materials, are sometimes useful upon land, or in manures, but they are often entirely neutral, and at times evil in their effects.

Grass.—Luther Purdy, Holmes Co., Ohio, writes: "I have a small piece of ground that has lain in sod several years, and propose to sow it to buckwheat, then to rye for soiling, with grass and clover in the spring for permanent pasture. Do you think my plan a good one? What kind of grass is the best? The land is gravelly, with some sandstone on it, and on the side hill, and subject to wash with heavy rains." The plan is not a bad one, for you may manure quite heavily, if you will, for the permanent good of your pasture. Apply 2 or 3 hundred-weight of bone-dust per acre, with the buckwheat, if you can, and a compost containing bones and ashes, leached or unleached, with the rye. Sow Timothy, red-top and blue-grass with the rye, and both red and white clover in the spring. The Timothy and red clover

will chiefly disappear in two or three years, while the blue-grass, red-top and white clover, with native grasses, will remain. It is difficult to state amounts, as it is all guess-work except as regards Timothy and clover. One pound of white clover is enough, for there is probably plenty of seed in the soil, and a few quarts of each of the fine grasses per acre would suffice, if evenly distributed.

A Book that is both Interesting and Highly Valuable is not one of the most common things, even in these days, when "of making many books there is no end." But such a book is "*How Crops Grow*," by S. W. Johnson, Agricultural Professor in Yale College—who, by the way, was originally brought up a practical farmer in Northern New York, though he has devoted the past 20 or 25 years to the thorough study of the Science of Agriculture. A friend who bought this book (*How Crops Grow*) on our recommendation, told us two months ago, that he had read the first hundred pages and gave it up because he found it hard, dry reading, as he knew nothing of chemistry. We suggested that he turn to page 220 and read the following 150 pages first. He now reports that he has done so, and that he has found so much of interest and instruction that he would not take a hundred dollars for the book, if he could not get another. We throw out this hint for the benefit of others. The 2d and 3d Divisions of the book can be readily understood by those having no scientific knowledge, and by boys; and aside from the practical information afforded, there is a world of interest opened to occupy one's thoughts while plodding on with his daily toil upon the farm. And those who read the second half of the book will be pretty sure to turn back and master the vast amount of information given in the first half. Altogether, this is one of the most valuable and thoroughly prepared books of the year. We would advise every one to read it. The price is \$2, which is very low, considering the great number of engravings, and laborious preparation. It is sent by mail at the same price. For sale at this office, and by booksellers generally.

Have We a "Spongiote" among us?—We regret to see Dr. Hull, whom we esteem as one of our first horticulturists, making use of this obsolete word. In a report of the doings of the Alton (Ill.) Horticultural Society, he is put down as saying: "I believe I wrote the first paper showing that the Spongiotes die as the leaves do, and how produced the next season. When the vine starts to grow, the little mouths spoken of will be found to open and shut like a valve, and, strange as it may appear, they only take up the food appropriate to them." We sincerely hope that Dr. H. has been incorrectly reported, for we cannot conceive how one at all acquainted with the laws of vegetable growth could make such a statement. The word "*spongiote*," has long been discarded by vegetable physiologists as a name for something which does not exist, and Dr. Hull in his lectures before that remarkable Illinois Industrial University used it to express root hairs, which is entirely different from the original meaning. Dr. Hull has many excellent ideas, and his teachings are such as we are always pleased to read; but we hope he will drop so ambiguous a word as "*spongiotes*," and when he means root hairs or rootlets, say so. When he gives us any thing more on those months which "open and shut like a valve," won't he please favor us with a drawing of them? We should be glad to be the medium of presenting so remarkable a discovery in vegetable physiology to the public in general, and the scientific world in particular.

Buggy Peas.—"A. B. T.," Columbia, Conn., asks how to save seed peas and not have them buggy. In districts like yours where the pea weevil is abundant the only way is to plant a late crop which may escape mildew, but is more likely to be attacked by it. Our seed dealers have their seed peas raised far north, where the insect is not troublesome.

Pondrette.—New Use for Old Thrashing Machines.—"G. A. P.," of Sandy Hill, N. Y., hauls night-soil from the village and muck from the swamp and puts them in two adjacent piles; then, when sufficiently dry, sets his horse power and thrashing machine running and one man at each pile to shovel. The materials are thrown into the thrasher in about equal quantities, and the result is a most perfect commingling, and a fine article of pondrette which gives off no odor.—[N. B. The semi-liquid consistence of night-soil as usually obtained would essentially interfere with making a "pile" of it, but we conceive no difficulty in reconciling our correspondent's statement with probabilities if the half fluid mass be confined at first by low banks of earth or muck, and thus exposed to evaporation by the heat of the sun. This should be done at a distance from dwellings, or the mass should at first be partially dried and covered by a layer of dry swamp muck.]

The American Entomologist comes as bright and full of "vim" as ever. It is impossible for any agricultural journal to give to insects the space which the importance of the subject demands. This journal admirably supplements their work, and every one who takes an agricultural paper should have the Entomologist if he can afford it. It costs \$1 a year and gives many times that value in "bug" knowledge. Moreover we like it for its open war upon lumbbugs of all kinds.

"Cut-Worms."—"S. H.," Rancocas, N. J., asks for a remedy for cut-worms, and complains that "they attack all kinds of truck, and even cut down the rye." We suspect that the "cut-worms" are the white grub, the larvæ of the May-bug. How to destroy them is as yet an unsolved problem. In France they have a close relative of this with similar habits; they plow the ground and employ children to pick them up. Kill all the May-bugs—we have disposed of three which came at the light while we were writing this far. The Indians in their warfare kill women and children. We once remonstrated with a Chief against this practice; his excuse was forcibly, if not elegantly put, "No nits, no lice." The May-bug or May-beetle is a harmless looking insect, which comes into the rooms at night and makes a great noise. It is capable of being the parent of much trouble. Squelch it wherever found. Quantities of them may be caught by shaking the trees early in the morning.

Rose Bug.—"E. H.," Kutztown, Pa. We know of no application that will disturb this hard-shelled fellow. The best way is to shake it off early in the morning and kill.

The Department of Agriculture.—We are pleased to learn from various sources that the improvements in the grounds of the Department have made satisfactory progress. We saw the plans of Mr. Saunders, the efficient Superintendent, and have no doubt that if properly carried out, they will result in giving us the most complete arboretum and botanical garden in the country. Now, Messrs. Senators and Representatives who hold the purse strings, will you not please let your wives buy their own bouquets, and shut up that florist's shop near the Capitol which is ridiculously called the "Botanical Garden," but which is simply a national disgrace, and give the money which is expended there for private uses to the Department of Agriculture? Do let us tax payers have something worth looking at when we go to Washington. If you give money for planting trees it will be spending it for something that will every year increase in beauty and value. The statuary and paintings upon which so much has been spent are mainly such as make one wish that the Capitol had been despoiled by the enemy. Please give us something for our money.

Wine Making.—A discovery in relation to fermentation—one applying equally to cider and other liquids—has been made in California, which, according to the accounts given, will be of the greatest importance to the wine makers of the country. By the ordinary process of fermentation it takes many months to complete the process, and then the wine has to stand one or more years to ripen, subject all the time to various accidents and diseases. In the usual method the contact of the air is at the surface of the liquid in the vat or cask only; by the new process, which has been patented, air is at intervals forced through the liquid from a perforated tube placed at the bottom of the vessel. It is claimed that the whole process of fermentation (without any second working) can be completed in about five days, and that in from two to four weeks after fermentation has ceased the wine or cider will be clear and ripe, and not liable to undergo any further change.

Farming by Inches, or with Brains, Sir.—Uniform with "My Ten Rod Farm." Pp. 123. Loring, Boston. That this work should be "uniform" with "My Ten Rod Farm" is not at all singular, as it is by the same young man, who in print assumes a "uniform" which most men are slow to adopt, though there are instances in which the other sex have appeared as male writers. "My Ten Rod Farm" is the story of a woman whose husband died, and this is by a woman whose husband was near dying but recovered on "garden sassa," an indication of an improved sanitary condition in the suburbs of Boston. Now while we give the author of these works credit for an excellent style and a most capital way of putting things, which would find proper scope in our magazines, we cannot regard his works as valuable additions to our horticultural literature. The work before us is in the main Washburn's excellent seed catalogue discussed by the aid of Henderson's "Gardening for Profit." He or she, as we may consider the author, enumerates the works which he or she found useful in his or her operations, and he or she says: "At that time Henderson's

Gardening for Profit was not published." Now it so happens that Henderson's "Gardening for Profit" was published before one of the works quoted, and we think before one or two others in the list of those from which he or she was provided "with Brains, Sir." One or two horticultural novels were well enough, when, as in the case of "Ten Acres Enough" and "My Vineyard at Lakeview," they were men's records of men's experience; but when a man hides himself behind a woman's name to give us in a diluted form works which, like "My Ten Rod Farm," were inspired solely by Henderson's "Practical Floriculture," and "Farming by Inches," equally based upon Henderson's "Gardening for Profit," we feel it due to the women who have written and are writing about horticultural matters to advocate "women's rights," and one of these is that their sex shall not be assuaged by men in writing fictitious autobiographies. We know several women who have been through severe trials and found profit as well as pleasure in horticulture, and we hope that they will come forward and give their experience without assuming a garb not belonging to their sex. There is not the slightest reason why Mr.—should call himself Mrs. Caroline Gilman. He has talent enough, and can write well, and need not waste his time in telling us improbable stories of impossible persons.

Canada Thistle.—"J. H.," Mt. Pleasant, Del. We have published so much upon the subject of eradicating the Canada Thistle in former years that it is not to be wondered at that you have seen nothing since January. The methods are, mow just before it blooms, and keep mowing as often as it grows. Smother it out with a straw stack. Salt it and let the sheep eat it. Cut off the stems and put salt on the roots. Any one can destroy it if he keeps at it. Mr. Beecher suggests to try to cultivate it as a crop, and then it will be beset by all possible pests. We suspect, by the way, that our correspondent has not the Canada Thistle but a plant common in Delaware, and often called by that name, which is the Horse-nettle, *Solanum Carolinense*. This is quite as bad as the Canada Thistle, but may be conquered by persistent work.

Buckwheat Seed.—G. W. Clemmer, of Tenn., asks how long buckwheat will retain its vitality. This all depends upon the manner in which it is kept. Seed one year old is preferred, but we have known old seed to germinate freely. The simple way to know whether a sample is good or not is to test 100 seeds sprinkled between two sods laid earth-sides together.

Good Again for the "Buckeye" Mower.—David McBride, of Cumberland Co., N. J., seeing the statement made by Gen'l. Halstead in the June *Agriculturist*, writes us: "I sold a Buckeye 10 years ago to Mr. William Fogg of Shiloh in this county, who says that he has cut on an average 400 acres a year, and that one year he cut 600 acres, and the machine has never cost him anything, except for new knives and new fingers, about \$30 in all. I think this rather beats Gen'l. Halstead's statement."—Remember.—The Publishers of the *American Agriculturist* send a No. 2 Buckeye, costing \$125, to any one sending 150 subscribers at \$1.50 each.

Hay! Make Hay!—A Maryland subscriber writes: "Land is cheap here, the soil, clay and sand, and splendid grass land, but the farmers do not know anything about hay. It is all corn." This indicates a great agricultural fault,—perhaps we ought to say *sin*. To regions where grass is a natural product and even a nuisance among cultivated crops, hay is brought in great quantities from the North for the maintenance of those horses and cattle which cannot be pastured. The South might raise its own hay, and it ought to do it. Almost all farmers save a good deal of corn leaves stripped off before they are ripe, and when dry bound in sheaves. This is all the native hay used over a large section.

Best Breed of Cows for Milk.—"W. R. R." We answer this question, in some way, frequently. Farmers who sell milk, and care nothing for quality, are partial to Short-horn (Durham) grades out of good-milking common cows. Those who make cheese and butter prefer Ayrshires or Ayrshire grades. Those who make fancy butter the chief thing, or who wish milk of great richness for their own tables, select the Jerseys. Great milkers occur in all breeds, occasionally. The Devons give a good quantity of rich milk, and the Holstein or Dutch cows are great milkers. Your choice would be wisest, probably, if it fell upon the Ayrshires or Devons as giving the best returns for food consumed and care given, and making good veal and excellent beef.

Another Handsome Architectural Work.—Messrs. Loring & Jenny, architects, of Chicago, are the joint authors of a large and handsome folio on "The Principles and Practice of Architecture," con-

taining 46 plates of plans, elevations, and details of Churches, Dwellings, and Stores of their own construction, together with an elucidation of the French plan of "apartment houses," and a discussion of the problem of providing suitable dwellings for the laboring classes of our cities. We are glad to find the principles of correct architectural taste so ably discussed and so well illustrated. The chapter "Truth in Architecture" is especially commendable in these days of "frescoed" sham interiors of churches and of pine-free-stone porches and pillars. The designs are, many of them, elaborate and elegant; the work will have an excellent influence, into whatsoever hands it comes. It may be of great value to builders, and many architects used its tutoring. Letterpress 62 pages, folio, 46 lithographic plates. Published by Cobb, Pritchard & Co., Chicago. For sale by Orange Judd & Co., and sent by mail, prepaid, for the price—\$12.

Coal Tar on Shingles.—Jas. McClive. Not long ago when gas or coal tar became very abundant it was utilized in many ways, and more or less as paint for wood and metals. Upon metals it gradually dried and formed a varnish-like surface little acted on by the weather. On wood a similar surface was formed, but not altogether by evaporation, for a portion of the tar struck in, and though it looked well ("black but comely"), the result proved that when exposed to moisture, tar-coated wood would absorb it more or less, and generally decay quicker than if not coated at all. This is the case probably when shingle roofs are coated with tar. The practice is now generally, if not universally, condemned.

Potatoes—Good Tops but no Tubers.—"A. M. C.," of Savannah, Ga. The trouble with your neighbor's crop which looked so well, but yielded nothing, was probably the manure and the season combined. Heating animal manures always give a tendency in potatoes to run to top, and the production of too much vine arrests or retards the formation of tubers.

Fencing—High Farming—Large Farms.—The reader will find some thoughts on these topics in the "Walks and Talks," page 251, that will afford food for thought and probably call out some protest. The subject is important.—[Eds.]

Whitewashing Shingles.—J. McC. We know nothing of the use of the water-lime and milk wash you mention, but in the situation it could hardly be in any way superior to whitewash,—which, by the way, is improved for inside or outside work by the addition of a lump of tallow or any clean grease, nearly as big as one's fist, to a pailful of whitewash, put in while the lime is slaking. Lime applied to the shingles, course by course, as the roof is laid, is a great preservative.

American Pomological Society.—All interested in fruit growing will remember that the 12th session of this Society will be held at Philadelphia, in Horticultural Hall, on the 15th of September next. It is expected that this will be the largest and most important meeting the Society has held. Preparations have been made to reduce the price of board at the hotels in Philadelphia, and negotiations are in progress for reduced fares on the several railroads leading to that city. We shall probably be able to give more information on this subject next month. Life membership, \$10; biennial membership, which secures the volume of Transactions, \$2, to be sent to Thomas P. James, Treasurer, Philadelphia. Send fruit lists of State and local Societies to P. Barry, Rochester, as early as possible, and fruit for identification and new varieties to F. R. Elliott, Cleveland, O.

Iron and Pear Trees.—"J. J. H.," Delphi, Ind., says: "I have near my pear orchard a knoll of ground formed by springs from a bluff. The water from the springs comes from an iron bog, and the soil, highly charged with iron, is of a very red color; and though loose, it will clog any plow we ever used on it, even in July. Would it be any advantage to my pear trees to make a trench about three feet from stem, and fill with this soil?"—It has been asserted on several occasions that iron in various forms is beneficial to pear trees, but we never could get any positive evidence on the point. It has been argued that as iron is a useful tonic to the animal system, it must therefore be useful to the pear. "J. J. H." has an excellent opportunity to try the experiment and report the results. It would make the experiment the more valuable if trees of the same kind were selected, and, as near as may be, in the same condition. Treat some with the iron, some with good composted manure, some with lime and ashes, and some with nothing. Unless the trees are small, cutting a trench three feet from the stem would be root-pruning, and the benefit arising from this would be ascribed to the iron. The best way in each case would be, to make the application to the surface, and then thoroughly fork it in.

Lightning-Rods.—Several have sent circulars of makers of patent lightning-rods and asking if this or that is the best in use. There is so much nonsense and ignorance of the simplest laws of electricity mixed up with matters that are true, in claims for these rods, that they are amusing reading. The essentials of a good rod are these: it should have a good connection between all its parts; it should extend some feet above the highest parts of the building, and terminate in a sharp, indestructible point; and it should at its lower end be in contact with moist soil. Where there are several rods upon a building, let them be connected, and if there is a tin roof, let this be in contact with the rods. Insulators are not of any consequence, and add needless expense to the rod. Copper is a better conductor than iron, but more expensive, and iron rods will answer every purpose, if properly put up. It is probable that any of the several "patent" rods will prove efficient, but not more so than a common square nail-rod properly put up by one who understands it. Some of the lightning-rod travellers are honest men who will do what they agree to do, while others are regular swindlers. Those who engage to have rods put up should make a bargain for the whole job beforehand and not trust to after-measurements at so much a foot. An honest man will be willing to contract for the work at a stated price.

The American Association for the Advancement of Science will hold its 18th meeting at Salem, Mass., on August 18th. We advise the A. A. F. T. A. O. S. to devote its first hours to the adoption of some name less cumbersome than the one it now holds. In spite of the name, the Association is a very excellent one, the conditions of membership of the most liberal kind, and its gatherings are attended not only by those eminent in the various departments of science, but by the lovers of science who wish to hear what the oracles have to say. Salem is a delightful old town and already of itself a center of science, and it is appropriate that the Society with the long name should meet there.

Canned Peaches.—A valued correspondent in Boston writes us a protest against the quality of the canned peaches in the market. He says, and truly, that as a general thing they are not fit to eat. Last year was one of unusual scarcity, and anything in the shape of a peach, whether ripe or not, was used to fill the cans. The present season there promises to be an abundant peach crop. Now here is a first-rate chance for some canning establishment to make a reputation. Let it be known that a certain brand of peaches will be when opened eatable, and not the tough, slimy apology for peaches that we have had, and the fortune of that house is made. Buyers wish a good thing or nothing.

"Rascally" Seedsmen.—We have received several letters complaining of seedsmen in different parts of the country. We do not answer these "through the paper," as requested, as we find the charges are against persons whom we believe intend to deal fairly, and our experience with many thousands of letters yearly shows that the fault is rather more likely to be that of the correspondent than that of the seedsman. At a large seed house in this city, we recently saw a file of perhaps fifty letters, most of which had contained money, and there was not the least possible clue to the senders. In some the signature was omitted, in others the name of the State, and in some both P. O. and State were wanting. No doubt, the writers of these letters feel badly treated, and have set the seed establishment down as a swindling concern. It would be well before asking us to publish this or that dealer as a lumbag to first ascertain if he ever received the order. In our large seed stores all hands work 18 hours a day, and then are often several days behind their work.

An Excellent Practical Poultry Book.—At a time when such rational interest is taken in the subject of poultry keeping, as of late, it has been a source of regret that we could not offer to our readers, without qualification, some book to be implicitly relied upon as a guide. The books which we have are many of them very good, so far as they go, or were good when they were written, while others are mere compilations, or valuable chiefly for showy pictures and descriptions of fancy fowls. We have wanted a book to put into the hands of the novice, who has means and tastes to become a poultry fancier and breeder; the village mechanic needed a book which would guide his wife and children in raising fowls and making a profit of a hundred dollars or more a year, on their one or two lots; the farmer needed one as much as any, to aid him in the choice of the most profitable breeds, in the rearing of early chickens, and in fattening market fowls; and the amateur or genuine fancier, whose fowl or poultry are his delight, and whose ranges of separate yards and runs indicate the expense he is willing to go to for his pets, especially needed a

book in which to find the views of the most successful and distinguished breeders and prize takers in regard to points, breeding, feed, preparation of different breeds for exhibition, and many other things of which the books we had treated very unsatisfactorily, if at all. Such a book was, we repeat, a long standing want, but now we have it.

Some weeks ago we received from Cassell, Petter & Galpin, of London and New York, a neat volume by Mr. L. Wright. We were charmed by the simplicity, clearness, and common sense of the book, and with its practical character. Its author exhibits the utmost familiarity with poultry keeping in its minute details and difficulties, and has not less accurate views in regard to the principles of breeding, which are equally applicable to the rearing of thoroughbred short-horns and chickens. The united experiences of the editorial staff of the *Agriculturist* are not very limited, and finding them to agree so well with Mr. Wright in all essential particulars, we are confirmed in the view that good practice in England is good in the United States also, and on this account Messrs. Judd & Co. secured the work as soon as possible for the American public, issuing it as one of their own publications and with the same hearty endorsement and recommendation. It is fully illustrated in all its departments, and we venture to say that no poultry raiser, however experienced, can read it without obtaining valuable hints and solid good. The subject is treated under six "sections," viz.: I.—General management with a view to profit. II.—Breeding and exhibition of prize poultry. III.—Different breeds of fowls,—characteristic points,—comparison of merits and defects. IV.—Turkeys, ornamental poultry, and water fowl. V.—Hatching and rearing chickens artificially. VI.—Breeding and Management of Poultry on a large scale. New York: Orange Judd & Co. 243 pages. 12mo. Price, sent by mail, \$2.00.

Canning Green Peas.—V. Miller and many others fail in preserving green peas. We have several times stated as follows: Peas are put in the cans, soldered up, and boiled several hours; the cans are then punctured, the steam allowed to escape, soldered, and boiled for several hours again, about eight hours in all. Then—they may all keep or may all be worthless. Our most experienced preservers, who follow the business of canning vegetables, find peas more difficult to manage than any others.

The Reconstructed Farmer.—We welcome this journal with particular pleasure. While we have not found it within our province to protest against the constant snarls and flings at the North, of some of the Southern agricultural journals, we have nevertheless felt sad that those who were engaged in ably advocating agriculture—a national cause—should so obtrude their political prejudices; we have kept silent in the hope of a change, and that change comes to us in the "Reconstructed Farmer." It proposes to forget the past and work for the future. Coming with this spirit we welcome and commend it, and hope that its success may warrant the manly stand that it has taken.

A New Potato Growing from an Old One.—W. M. B., Virden, Ill., sends an old potato with a new one growing from its side. This is nothing unusual, and often occurs where potatoes are kept sufficiently warm to start into growth and are perfectly excluded from light.

Articles of Association for Farmers' Clubs and Similar Societies.—We have frequent calls for the best form of Constitution and By-laws for local Agricultural and kindred associations, and would esteem it a favor if our readers who are members of Farmers' Clubs or local Agricultural Societies would send us copies of their articles of association, etc., that we may give the subject proper study, for the benefit of future inquirers. It shows a "healthy" state of feeling among farmers where these institutions are established. In general, the simpler the formal bond of association, the better. The real bond is and ever will continue,—interest in a common subject, maintained by interesting and improving stated meetings and exhibitions.

A Word to Col. Harris.—Harris of the Ohio Farmer comes to New York now and then. We are glad to have him come, as he brings a fresh breeze from the lakes with him. We treat Col. H. as politely as we can, and after all this, is it right for him to go home and pitch into our pet institution, the Farmers' Club? Just see what he says:—"Next to a visit to the Olympic, to see the play of Humpty Dumpty, is a Tuesday afternoon's amusement at the meeting of the Farmers' Club of the American Institute, which we went to see, as we usually do when we can command the time, on our visit to New York. The room was full of attentive listeners and enthusiastic talkers, but the management has fallen

into ruts of most profitless verbiage, from which the vehicle must be lifted by some original process, or its transactions will continue to be lightly esteemed in agricultural literature. The sayings and readings at this Club form a sort of weak and weekly gruel, which furnishes the staple diet in the agricultural columns of the political city papers. We hope to see this venerable institution reconstructed and made better."—Now, Col., this will not do. State pride and city pride call upon us to protest. What do you Backeye fellows know about farming, that you should sit in judgment on the assembled wisdom of New York City? You are not a Doctor of anything, nor an Ex-Alderman, nor an "Agricultural Editor" of a city paper. What can you know about farming? There is one comfort, though; you will be paid by the N. Y. Weekly Tribune. That sheet owns the Club and runs it for our amusement. We gave the Club a gentle punch some time ago, and they advertised us in two issues for nothing. Perhaps, after all, what we have quoted is just a clever dodge on the part of the Col. to get a notice of his paper in the Tribune. They bite at very naked hooks over there.

Sage.—"S. A. T.," Danvers Centre, Mass., says: "Here, where sage is raised by the ton, it is sown in the field between May 1st and 10th, weeded and thinned like carrots, and never transplanted." In this case the land is given up to the crop. About New York it is grown only as a second crop after cabbages, etc., come off.

Potato-Flies.—Several of the blistering beetles are destructive to the potato vine, and are popularly known as potato-flies. Mr. Daniel Hubbard, Montgomery Co., Ill., writes that his sons effectually destroy these insects by making a fire of straw and other light stuff upon the edge of the field at twilight. The insects are attracted from a great distance by the light, and in two instances the fields were completely cleared.

Liveforever (*Sedum Telephium*) is often a troublesome weed. Will some one who has successfully exterminated it tell how it is done?

Asparagus Beetle.—"J. B. M.," Newark, N. J., asks if we know of any way of destroying the asparagus beetle, except to cut and burn the shoots. As our bed is not troubled we have not had an opportunity to experiment. The pest is a serious one, and we shall be glad to hear of a remedy.

Tree Boxes.—"E. P. B.," Danbury, Conn. We never heard of properly applied tree boxes injuring a tree. They should be open, to allow access of air, and not so small as to cramp the tree in any way.

Sweet Potatoes.—Several ask if they shall move the vines after they take root at the joints. The roots which form at each joint soon begin to form potatoes, but they fail to attain any considerable size before they are cut off by the frost. In sub-tropical climates it is well to let them remain, but wherever there are frosts sufficient to kill the vines it is better to lift them and allow all the nourishment elaborated by the leaves to go to the principal roots.

Almonds and English Walnuts.—"D. L.," Sherman, Texas. No doubt both these will succeed with you, as far as climate is concerned, if your bothersome ants will let them alone. Even as far north as New York they manage to flourish. Any of our large nurserymen can supply you with trees.

"Fire Cracker Plant."—"A. A. J. P.," wishes to know the name of the plant usually called "Fire Cracker" and sometimes "Ladies' Cigar." Its botanical name is *Cuphea platycentra*, a native of Mexico, and a capital thing, whether out of doors or in the house.

Slabs for Strawberries.—"G. F. J.," Fayetteville, N. Y., recommends the use of slabs between the rows of strawberry plants, to protect the fruit from being soiled and to facilitate picking. This might answer for those who live near a saw-mill, and a bed covered with slabs would be much in the condition of the tiled beds made in England.

Bloodroot and Pennyroyal.—"Subscriber," Conlton, Ky. We doubt if these would pay for collecting if one has anything else to do. If Bloodroot is in such quantities that it could be plowed out and raked up it might do to gather it, but Pennyroyal would require to be pressed, to make it manageable, and the demand is not large.

Black Raspberries.—C. Carleton. These may be transplanted in the fall or spring, as may be most convenient. Set them four feet apart each way.

"Stonchenge."—A Work on the Horse. J. H. Walsh, editor of *The Field* (London) who has made his *nom de plume* not only classical, but high authority upon matters pertaining to the horse, has written an admirable work—"The Horse in the Stable and the Field; his varieties, management in health and disease, Anatomy, Physiology, etc." It is an octavo of 622 pages, illustrated by 170 engravings, most of them by distinguished artists, published by Geo. Routledge & Son, London and New York. This book has been for several years regarded as high authority on the subjects of which it treats, and a new edition now appears simultaneously in England and this country, printed from the same plates. Few changes have been made in that part which is particularly the work of Mr. Walsh, but the anatomical and veterinary portion has been thoroughly revised. We regard the work as one of the most valuable and practical on the Horse in the English language. It is a condensation of facts, reasons, and plain directions, and for aught we see is in almost all particulars quite as well adapted to the use of horse owners in this country as in Great Britain. It is placed on our list of choice works. Price, sent by mail, \$3.50.

"The New West" is the name which Mr. Chas. L. Brace gives to his new book on California in 1867-8, just published by G. P. Putnam & Son, New York. We have read it with great interest, gaining new ideas from almost every page, being led on from chapter to chapter by the pleasant style in which the writer presents his practical, common-sense views of society, customs, individuals, and classes, of beautiful scenery and natural wonders. The railroad brings us so near to the "New West" now that every thing written upon the subject has a charm. Mr. Brace is an old traveller. We have followed close in his footsteps (in "Home Life in Germany") more than once, and have been pleased to see how differently he saw things from ordinary travellers, and how much as one thinks he would see them himself. He says he has tried to sketch such features as other travellers have neglected. If he has, he does not appear to have neglected those features to which they devoted their pencils. The author's views of the agricultural capacities of the State, the great farms, gardens, vineyards, wheat lands, silk-worm growing, the homes of the people, the choice places for settlers to seek homes, etc., give the book a peculiar interest and value. It is a 372 page 12mo., beautifully printed and bound, and sent by mail for the price \$1.75.

Ohio Grape Growers' Association.

The summer meeting will be held at Lancaster on the State Reform Farm on the 25th and 26th of August next. Everybody is invited and a good time expected.

Evergreen for a Name.—A. C. Wood, Grant Co., Wis. The specimen is from Red Cedar, which always has prickly leaves when young. The "bur-like buds" are a fungus, which is not rare upon the tree, and often causes it much injury.

American Fruit Preserving Powder.—We have several inquiries concerning this, and have investigated the matter. We have not used it ourselves, but propose to do so this season. Fruit that was put up last year was perfectly preserved. The powder is of course a chemical substance, and as far as we have been able to learn, it is nearly inert; at all events it is not as active as common salt, and in the small quantity in which it is used its presence is not likely to be noticed. If, as claimed, and we see no reason to doubt it, fruit can be preserved in large jars, without any special care to exclude the air, it will certainly be a great blessing to housekeepers.

Hedging.—"D. S. F.," Jasper Co., Ill. You are too late to do anything with Osage Orange this year. The seed is sown in spring in a seed-bed, the plants taken up in the fall, and set in the hedge in the following spring. You can buy plants next spring from the dealers.

The Crows.—Dr. Geo. H. Bute, of Nazareth, Pa., has for many years been a consistent friend of the birds. He pleads with us in behalf of crows, telling of a state of things prevailing in a part of Germany about 100 years ago. There the crows were almost all destroyed by order of the government, and as a consequence mice multiplied to an unprecedented extent. Every wheat ear, it would seem, had a mouse on it. So crows had to be imported and encouraged. No doubt crows do more good than harm. They pull corn and destroy the young and eggs of small birds, but eat many grubs and mice. We tried trapping them in our cornfield with entire success. A flock had done a day's work pulling up the corn, and then we set a trap in the outside furrow, covering it lightly with tissue paper and dirt. Three bad eggs were laid in a sort of nest place under some brush and briars in

the fence row, in plain sight, and a good egg, broken, to show the yolk, was laid some 8 feet off. This was eaten, and in trying to get to the nest the trap was sprung and Jack Daw was caught by the foot. He made a great noise and called his friends about him, and no doubt they took warning, for no more came. The crow was not seriously hurt, and after being exhibited as an example and warning would have been liberated, had he not been killed by a passionate man, who was clawed by him.

Remedies.—"S. H., Jr.," Potsdam, N. Y. We keep as free from all "remedies" as possible, as we believe that popular medicine does more harm than good. Were we to publish your request, more than fifty people would prescribe the "best thing in the world" and no two alike. If you have no sensible doctor where you live you had better go elsewhere and consult one, and not depend upon remedies that may be suggested by people who know nothing of medicine.

A Good Cause in Good Hands.

A few years since, the establishment of the "Church Union" newspaper, with the avowed object of bringing Christians of all denominations into closer sympathy, was hailed with pleasure by all who love religion more than sectarianism. Unfortunately for the cause and the paper itself, until recently its course failed to be promotive of the end in view. A few months since it passed into new hands, and under its present able management is proving its right to its well-chosen title and establishing strong claims to the cordial support of those who approve of Christian Unity. We are pleased to notice that it avoids the error of endeavoring to impose *uniformity*—the very essence of denominationalism—but allowing men to differ in views, seeks to unite them in the common work of making the world better.

The Ohio State Fair will be held at Toledo, Sept. 14th to 17th. D. C. Richmond will have charge of "Pumpkin Hall," and if the show is as good this year as it was last, it will be worth seeing. At any rate, D. C. is an exhibition of himself.

Harrows.—The harrow in our May number (page 172) is highly approved by "T. E. R.," of Berlin, Md., who writes that he made one and thinks it is just the thing in size and shape, but as he did not like the way the teeth were put in, in this respect he departed from the diagram given, and improved upon it, which we have no doubt he did. Taking a chalk line he made parallel marks across the harrow fore and aft, two inches apart, and set one tooth on each line where the lines cross the tooth-bars. In the center, the space is three inches between the lines on which the teeth are put, the two parts of the harrow being brought as close together as possible. He used thirty-four teeth.

Grape Cuttings.—"E. M. M.," Smithfield, Va., put out some 4,000 cuttings of the Concord Grape, and "mulched them heavily with 'pine trash' (pine leaves we suppose); many of them put out leaf, and from some cause (either the cold spell or the mulch) have died." We do not suppose that the trouble was caused by the mulch. We have no hint as to the time the cuttings were set, but we infer that they were put in too late. A vine cutting needs to be in the soil long enough to form roots before the buds push. In Virginia we should set them in autumn. A cutting if put into warm soil will put out a few leaves, and having no roots the weakly shoot soon dies. In all dormant cuttings aim to get roots before the foliage starts.

What is the Best Breed of Sheep?

Hardy, healthy, not fine woolled, neither very coarse, but medium; good for mutton and for wool. W. R. R.—You describe the characteristics of the South-downs, and it may be this breed would exactly suit you. The Cotswolds are much heavier, have a longer fleece, which, though coarser, is much sought after and brings high prices on account of its silkiness and combing qualities. South-down mutton is much the best and brings the highest prices, but feeders prefer to fatten grade Cotswolds, or some other of the large long-wooled breeds.

More Grubs with Sprouts.—H. Higbee, Decatur Co., Iowa, has our thanks for the specimens. He will find an account of them in the June number.

The Flowering of a "Century Plant."—An American Aloe, *Agave Americana*, of this striped-leaved variety is now about to flower in the greenhouse of Messrs. Frost & Co., the well-known nurserymen of the Genesee Valley Nurseries, Rochester, N. Y. We have seen the Agave growing abundantly in Mexico, where it flowers in from seven to twenty years. When grown at the North, and under less favorable circum-

stances, it is so long in coming into flower that it is popularly called a "Century Plant," and is said to bloom once in a hundred years. This is a mistake, as the plant never blooms but once, and in this flowering affords a striking illustration of vegetable economy. The plant goes on forming its large, fleshy leaves year after year, some of those of Messrs. Frost's plant being 6 feet 6 inches long. These are very thick and succulent, and last for many years. When the flowering time comes, the stem pushes up from the center of the plant; it is about 4 inches in diameter and makes a growth in length from 3 to 5 inches each day. The stem runs up from 10 to 30 feet in height, and throws out symmetrically arranged flower branches, which together form a handsome pyramid. The flowers are very numerous, but in themselves are not very handsome, as they are of a greenish yellow. All this rapid growth of stem and profusion of flowers is at the expense of the nutriment stored in the thick leaves of the plant. They expend their substance in producing the enormous flower cluster, and the plant dies. We understand that Messrs. Frost have made preparations to allow the plant to develop itself properly, and also for the accommodation of the many visitors who will wish to see this rare floral exhibition.

Hybrid Corn not Permanent.

Different varieties of corn mix easily, and by a little painstaking to keep the ears covered with paper covers until the silk is out, they may be dusted with any kind of pollen, from the spindles, desired, and the kernels will be a hybrid variety. Thus three or four kinds of corn have been mingled and the resulting variety has proved constant and excellent for years on the home soil. When removed, however, and coming under different influences of soil and climate, it is liable the first or second year to break up into its original varieties, or something like them, the ears being quite variegated. After a while the tendency ceases, and the variety may then, and not until then, be considered established.

Vinegar.

"G. W. H.," asks how vinegar which has lost its acidity can be restored. A sailor in church on hearing the minister read the text "If the salt has lost its savor, wherewith shall it be salted," called out "more salt." If the vinegar is spoiled it must have been very poor vinegar to begin with, and our correspondent must begin anew, which we should prefer, or add more vinegar-making materials to the old liquid. Vinegar is only produced from alcohol; alcohol comes from the fermentation of sugar, and sugar may come from a change in starchy materials. To get vinegar we have to use some fruit juice or similar liquid that will form alcohol. Good vinegar will not "lose its sour," as our correspondent complains.

Barking Trees.

"C. P. W.," Maplewood, Mass., writes: "I have in my garden five apple trees, Baldwin variety, I should judge about 12 years old. Have borne a little for a number of years, but not much. About the middle of last June I peeled the bark from the bodies of two of the trees, and from the lower part of one of the largest limbs on another tree, leaving only the very thin bark next to the tree untouched, which could at that time have been scraped off with my thumbnail. To-day the two trees and single limb are filled with blossoms, while I find no blossoms on the trees unpeeled or on any part of the tree with one limb peeled, except the peeled limb. I ask the philosophy of such results from such a process. I also served a crab-apple tree the same way, at the same time, then with fruit upon it. The fruit remained and now it is in full blossom. I stripped off the bark as clean as you would to make a whistle, only taking care not to injure the soft bark next to the wood." Mr. W.'s experiment illustrates what is now generally accepted among fruit growers, that whatever threatens the destruction of the tree throws it into fruit. We alluded to this matter on page 258. We have known similar instances to that cited by our correspondent.

Crop Prospects.

Our letters (up to about the 10th of June,) which allude to the crops, and great numbers of them do so, almost uniformly report most favorable prospects for winter grain, spring grain, and grass. From the South the corn crop is also included among those promising well. Little is said about cotton, but from other sources we judge that this is no exception. In fact, we have hardly seen or heard of a grumbling farmer or fruit grower, and this is wonderful, for it is a farmer's privilege to grumble at the weather as much as it is a sailor's to find fault with his "grub." In some parts of the West the peach crop will be a small one, but in general there is every promise of a good peach year, while apples and pears are likely to be in great profusion. Of course there is a yet a chance of some disaster from insects, disease or bad weather, but it should be a cause of general rejoicing among farmers and horticulturists that the prospects for a year of abundance are so flattering.

Grapes at Hammondsport, N. Y.

[The following account of the grape products at Hammondsport, Steuben Co., N. Y., is by Dr. E. Van Keuren, one of our most thorough and conscientious cultivators.]

The grape vines of this region, as a whole, have come through the winter remarkably well, and give promise of a large crop of fruit. The buds of a few failed to put forth, but they are not much to blame, considering the treatment to which they have been subjected. Over generously enriched, and starvantly stinted soil, together with untimely, poor, or positively no culture and training at all, have their results here with grapes, as they do everywhere, and in all other branches of horticulture and agriculture.

Comparing notes made in '67, '68, and those being made this year by actual measurement of vines of the same kind in like circumstances, it appears that the season with our grapes is a week in advance of either of the past two, and the season has been so favorable for cultivating vineyards, that we have been able to keep pace fully with the advanced growth.

The custom of late fall plowing, throwing the ground up against, and even over, young vines, is yearly becoming more general. How much of good wintering and early and healthy starting of the young shoots should be attributed to this it is as yet difficult to determine. There is no doubt that good results from it, by the protection from freezing it affords to the roots of the vine, its fertilizing influence upon the upturned earth, and the destruction it causes of the roots and seeds of weeds, and, we may add, the facility it affords for completing the first course of spring cultivation at its proper time. Our spring cultivation is or should be finished in the month of May, and consists of plowing between the rows to the depth of from four to six inches, throwing the earth away from the vines, and hoeing with what is called with us a "grape hoe," stirring the narrow unplowed strips of soil to the depth of four inches, care being taken to remove all weeds and grass, and not to injure the roots at or near the head of the vine. We find the grape hoe so convenient and valuable an implement in the garden, that I am tempted to give a hint as to its form for the benefit of those who never saw one. It has an eye as large as that of a common axe, but rather irregularly square, from which eye proceed two prongs, parallel with each other, two inches apart, about seven inches long, an inch wide, half an inch thick near the eye, and tapering to an edge. Imagine the blade of a carpenter's adze cleft, and somewhat straightened, and you will have some idea of it.

The work of plowing and hoeing being done timely, the intelligent vineyardist is ready for disbudding, or "rubbing out," as we familiarly call it. This takes place from the 25th of May to the 10th of June with our best growers. The young shoots are then tender and easily removed. The importance of this branch of training or pruning is never overestimated; it affords an opportunity for the correction of errors or omissions in fall pruning, and allows us to determine, accidents aside, the quantity of fruit the bearing vines shall carry. When two or more shoots start from the same bud, one only, the strongest, is left, and all barren ones, and shoots coming out from the old wood, and springing up from the roots around the head of the vine are removed. Those fruit-bearing shoots, (always on the last year's wood,) which are feeble, are taken out, leaving such a number as the vine is able to support; never losing sight, however, of making provision for next year's bearing canes. In the performance of this work, the good sense and judgment of the vine-dresser may be displayed to the advantage of the proprietor of the vineyard.

The desire for improvement or change, so natural to our people, finds no abatement of activity, but rather an increase in not a few of our grape growers. It is not uncommon to hear some of them say "I wish I had planted this or that variety, instead of those I have." A few of the newer kinds have been so thoroughly and ingeniously pressed upon their attention, and the past two years having been rather unfavorable for maturing some of the later varieties, there is sort of unrest in the minds of some—a longing for the realization of their Utopian ideas of vines and grapes. They are anxious for earliness, never-failing hardiness and fecundity, with the most superior excellence of fruit for wine and market. Who would not be pleased with such a realization, but who can, in reason, expect it?

We are producing mainly Catawba, Isabella, Delaware, Diana, and Concord, proportioned in the order I have named them, and we have planted quite largely, within a year or two, of the Iona and Isabella.

Most kinds, that can be grown in this latitude, are found here in small quantities; the newer sorts are on trial, and, as a whole, our vineyardists act upon the rule of proving all things, and holding fast that which is good.

Draining in Quicksand.—A correspondent asks for information concerning the laying of

drains in a subsoil of quicksand. This is the most difficult problem that the drainer has to deal with, and its solution, when any solution is possible, depends very much on circumstances. It is almost indispensable to give the drain sufficient fall for an uninterrupted flow of the water entering it. Where this fall can be obtained, as many men should be employed as can work to advantage, the ditch should be opened as rapidly as possible, and the tiles laid and covered at once, all accumulations in advance of the tile layer being immediately thrown out, so that there shall be no interruption to the flow of the water in the tiles. If the land to be drained is a level swamp in which the fall is necessarily too slight for this treatment, one or more open ditches should be dug, deeper than the point at which the tiles are to be laid, and kept open, if necessary, by unremitting shoveling, until the excess of water has been removed. If the swamp receives the water of streams or springs from adjoining land, a perfect outlet for this must be first provided, so that the condition of saturation may be overcome. Quicksand is simply fine sand saturated with water. Owing to the defective binding qualities of such sand in such condition, as the water flows out from it, it carries the sand with it. The excess of water once removed, it will retain its place sufficiently well, and if future additions of water are allowed to escape without saturating the stratum, all further difficulty is obviated. Fortunately such sands are very porous, and a single open drain will remove the water of saturation from a distance of several hundred feet on each side, leaving the ground sufficiently firm to be drained with tiles without difficulty. If these can be placed somewhat below the level of the layer of sand, it will be all the better. If in digging the open ditch above referred to, the sides continue to slip in, there is nothing for it but to let them take their natural slope and to keep throwing out the slip. An outlet must be afforded for the lubricating water before any further work can be successfully done. We are sorry not to be able to give any more satisfactory advice, but there is no royal road to land drainage, and he who would drain a quicksand must begin at the foundation and expect to spend a good deal of money before the real work of reclamation can be commenced.

Milking Machines.—"A. F.," Abington, Va. There is no milking machine which we know of that will answer your purpose. There is one which has been exhibited at our fairs and in our city for some years, but we have never heard of its being used on any farm or in the milk stables, to which it seems adapted.

Butter Powders.—We believe that all the "butter powders" are essentially frauds. Those which we have investigated are absolutely so. The claim that a pound of butter may be made from a quart of milk, by any hocus-pocus, is false.

Bee Notes.—By M. Quinby.

Swarms Going to the Woods.—Whoever has movable comb hives should no longer complain of bees going to the woods. In this day, every one knows, or might and should know, how to prevent it. The very first time that a queen is seen—and it should be very soon—after she commences laying, cut off one wing. If increase of stock is wanted, divide, and make artificial swarms as soon as strong enough in the spring. It is unnecessary to wait until queen cells are sealed over. When the old queen has gone or is taken away, allow but one young one to hatch. Suppose the old queen should get lost in her efforts to go—unless Italian it is of no account—her place is easily supplied at this season.

Answers to G. W. C.—I do not think that "the light coming in at the window of the hive during observations, or the smell of green elder, was the probable cause of bees leaving." Yet it was possible. There are many other causes more probable. The hot sun directly on the hive is often the cause. "If 2,000 cubic inches is the proper size of hive for latitude of 42°, what would you recommend for Tennessee, or lat. 35°?" Ans.—One square foot is probably sufficient. "What is meant by a drone queen?"—Ans.—The queen bee that never has met the male will lay eggs that will hatch drones, and those only. The queen to meet the drone, or male, has to leave the hive and meet him in the air. Now one that has deficient wings never can become a fertile queen. One impregnation is sufficient for a lifetime, except in a few rare cases, when the effect of the male becomes exhausted, and in this case the eggs hatch only drones. That she does not require a second impregnation after she commences laying, is proved from the fact of her continuing to lay for two or three years after having her wings cut, and when she is unable to fly.

The Main Thing.—Keep your bees supplied with surplus honey room. Rather than let them be

outside the hive idle, put two tiers of boxes on the top, and some on the side, and as fast as filled replace with empty ones. The bees will contrive to find room for just one cell more long after the general sealing up is done, and if you wait until the last is finished, it may make a difference of very many pounds. Besides this, honey shows its purest whiteness when first sealed.

Castle Garden Labor Exchange.

Among the great number of emigrants continually landing at Castle Garden, New York, many of all nations are entirely without means, or possessed of very little. They can not leave the city, and must find immediate employment, or soon become dependent upon charity. The Commissioners of Emigration have established a bureau under the charge of attentive and accommodating men and women, where employers, and those wishing work, are brought together without expense to either. Farmers and others, who can make it possible to visit New York personally, can thus, if they are tolerably good judges of character, obtain good "help" of either sex, especially males, at fair wages. Selecting help is a business which should be attended to by the employer personally, if possible. The supply of labor depends greatly upon the arrivals of emigrant ships, and the character of the emigrants varies also according to the part of the world from which the ships come. Irish, English, Scotch, and Germans, prevail, the first being in the majority usually. There are almost always many among those seeking employment who have been a year or more in the country and can speak English, and know our ways. These often know too much, but among them good men may be found. We are glad to commend this institution, and do so from our own experience and that of our friends.

THE GREENWICH ST. INTELLIGENCE OFFICES, as a class, ought to be ranked among the worst "humbugs" of New York City. The writer has considerable experience, having been "taken in and done for" repeatedly before the establishment of the labor exchange above noticed. The system pursued is briefly as follows: Runners, as they are called, bribe men to these places; farmers come and hire them; the farmer is charged 1st, \$1, to be taken out of the man's wages, as his (the man's) office fee (this goes to the runner); and 2d, \$2 as his own (the employer's) office fee. This should entitle him to another good man if the one he hires does not prove good or leaves, which privilege should last one month. The effort is usually made to get the farmer to advance one, two, or more dollars to pay the man's "board bill." Before the man leaves, he is told if he does not like the place to come right back and he shall have another at once. If the farmer takes the man away with him, well; he pays his fare on the cars home, and the next day, or within a day or two, misses his man and finds he has left and gone back to the intelligence office. Another way is to put off upon a farmer a man who does not intend to stay longer than overnight, if indeed he does not slip away from his employer before he gets to the nearest ferry with him. This class of men are a regular stock, who each, under different names, are all the time going back and forth with farmers, and we have no doubt make a good living by receiving each time the \$1 fee which would have been given to the runner for a new man. The stock of bad, lazy men among the newly arrived emigrants is not so great that these intelligence offices can furnish only this fugitive class of laborers, but now and then of course men so obtained turn out very well. It seems there is not enough legitimate business to be done to sustain these establishments, and so these tricks to get as much money as possible out of the farmers are resorted to. We counsel our readers to avoid all these establishments, and to patronize the Castle Garden Labor Exchange, which is a great convenience to farmers and a blessing to the emigrants. We wish to add that we are under no obligations whatever to the gentlemen at Castle Garden for special courtesies, being unknown to them as connected with the press, and having gone there as any other farmers would go.

Garget and other Swellings.—The condition of cows' udders which the names *Caked Bag*, *Bloody Milk*, *Inflamed Udder*, in a measure describe, is of very common occurrence, and is usually entirely remedied at the outset by the sucking and butting of a healthy calf. The next best treatment is diligent rubbing after milking, lubricating the bag and hands with grease. If very painful, some application is best to lessen the pain. We have used dilute tincture of arnica with success, and have administered this tincture in one teaspoonful doses given morning and evening in the feed, and suppose it allays feverish tendencies. The great point is to be sure no milk remains in the bag, and rub and knead it well. Mr. Geo. H. Griffin, of Galesburg, (no State), writes as follows, recommending kerosene, which is a remedy al-

ways at hand or so easily obtained that the suggestion is valuable:—"One or two applications of kerosene, rubbed on with the hand, will entirely restore the adders to a healthy and natural condition.... Some three years since the under jaw of a valuable cow commenced swelling, and in three or four days had become very large and painful. Some of my neighbors said it would kill her; they had seen many such, and never knew one to be cured, and my convictions were the same. But I thought of my garget remedy; made two applications only of kerosene, which removed the swelling entirely."

A Pear Blight in Missouri.

"Bonne de Jersey," Chillicothe, Mo., writes: "I observed the following disease last summer on a dwarf Louise Bonne de Jersey, four summers planted, and which had made a more than ordinarily vigorous growth, it having been well cultivated and mulched. The disease commenced at the top of the tree, extending downward and only on the south-west quarter of the tree. The outer edge, or rim, of the leaf commenced to crisp, as if burnt, being harsh and brittle, and in several weeks the trouble extended to the centre and destroyed the leaf, which finally dropped off. During the attack, the crisp portion will readily break off from the healthy portion of the leaf, and by fall the branches attacked are entirely leafless. In February last I cut back vigorously the limbs attacked, and this spring a very feeble effort was made by nature to put forth leaves; but while the remainder of the tree was a mass of verdure, the limbs cut back were nearly bare. I discovered, also, that the bark began to present a rough appearance with whitish blotches, and was apparently dying, when I immediately cut off all the limbs attacked, close to the body of the tree. I am informed to-day by an old fruit grower, to whom I mentioned it, that he has observed the same disease for some years past in this State, and says farther that it is very much more common to the Bonne de Jersey than other dwarfs, though he has seen it on other varieties. Having a pear orchard of 175 trees I feel interested in this matter."

[This seems to be a form of "pear blight," though less sudden in its action than the disease usually known by that name. Some writers have, with the probabilities in their favor, ascribed pear blight to a fungus, but proper observations are needed to establish this. So far as known, severe surgery is the only help. The difficulty with these troubles is, that they do not manifest themselves until the vitality of the limb or tree is destroyed and the mischief is done, and cutting only removes what is already dead. Until we have some one who can devote a life of hard work to the investigation of these matters, we shall be groping in the dark. To say that it is a fungus does not help us in preventing the disease. All that we are now able to advise is to cut and burn the affected portions, if it takes the whole tree, and by good cultivation produce a vigorous state that will go towards enabling the tree to resist such attacks. We are aware that this does not meet our correspondent's case, who asks for a "remedy." Will some one give better advice?]

IN WITH THE NEW, OUT WITH THE OLD.—The heading above given expresses the spirit of the age, though it is sometimes misapplied, but in the case of climbing roses, it is the teaching we need. Having come into possession of some climbing roses raised by another, we can see how the old should have been taken out and the new put in. At least half of each bush is dead wood carefully put up to the trellis, while last year's shoots, which made a vigorous growth

and would have filled the trellis, are swinging in the wind. Those who grow climbing roses should each year lay in a good stock of new wood and remove a corresponding amount of old.

Roads and Road-making.

We accept poor roads as one of the inevitable evils of life, and even call some of them good, or excellent, in comparison with those vastly poorer. The people of one town brag of roads that cost them three or four times what much better ones ought to cost, and are highly satisfied with their own, and the high road tax, too, when they go outside their town limits and see how much worse off other people are. Were we governed by a Louis Napoleon, Emperor, we would have excellent roads, for he would know very well that every dollar lost in the wear and tear of wagons and horse-flesh upon poor highways, leaves just so much the less for him to draw from the people by taxation. He would know that it costs vastly more to keep roads in passable, or poor condition, than in first-rate order, having reference only to the outlay of money and labor upon the roads. Why is it that we cannot learn the same facts? Why can we not see our own interests, every man's interests, as well as the head of a monarchical form of government can see his? The system of working the roads from one end of the land to the other, so far as we are acquainted, is the most absurd that could be contrived. The township or the county officers set apart certain sums of money to be used for keeping the roads in order in certain districts, to each its allotment. This money is to be apportioned among the tax-payers, and either "worked out" at a low rate of wages per day, or collected in money with other taxes, at the option of the tax-payer. The road tax is usually worked out. The road-master, or whatever else his title may be, is a resident of the district, and will rather follow the customary loose way of doing business, than see to it that his work is done in the best way, and with the least expenditure. He will accept for a day's work the labor of mere boys, or of old men, and will have some days not a single able-bodied man on his whole force, except himself and his hired man. The result is, where ten days' works are "worked out," three or four are *done*.

Besides, when spring work is pressing, or haying and harvesting absorb all the labor of the community, no road-master will do so unpopular a thing as to warn out his neighbors to work the roads. His own farm work presses besides. So he delays until autumn, after doing a few days' work in the early spring. The roads are plowed up; gravel and clay are scraped into the middle, "hog-backs" are made, to keep the water from running and washing in the middle of the road:—then comes frost, and all the new work remains soft and unsettled all the winter and spring, except when frozen solid. All this is easily obviated, and we may just as well have good roads as poor ones. Almost every township has a good young engineer and surveyor. Appoint him road-master for the town, give him a fair salary, one or two yokes of oxen, one or two pairs of horses, with carts, wagons, plows, scrapers, and small tools to match. Let him have money enough to hire eight or ten good men in summer, and perhaps four in winter. He should understand that his business is to study road-making, read up on the subject, learn where the best materials are, break out of old ruts, and as soon as possible

give the people good roads all over the town. There would of course be first, second, and third class roads, according to their importance, and the amount of travel upon them.

Similar systems to the one suggested are pursued in many townships, and the result is invariably a great improvement in the roads, and after a little while, even at first, in some cases, a decided decrease in the cost. We know of some towns in which the road hands are not employed more than half their time, although they cut and prepare timber, make bridges, and do much extra work. Their services are, however, constantly in demand, and by digging cellars, moving buildings, laying cellar walls for houses, etc., making side-walks in the village, putting down cement walks and floors on private grounds, and in many other ways, they earn enough to pay a large part of the expenses of men and teams. The road-master inspects all the roads once a month, especially after storms, and needed repairs, if promptly made, are slight and efficient.

Tim Bunker on the Jerseys.

"Got a touch of Jersey blood in 'em, I guess," said Seth Twiggs, as I drove some new cows and a bull home through Hookertown Street.

"Where did you scare up them critters?" inquired Uncle Jotham Sparrowgrass, as he leaned his elbow on Seth's garden gate. "They look amazingly like the cows they used to have over on the Island forty year ago, and they was poor sticks, too."

"Wall, now, Squire, why didn't you git goats and done with it?" inquired Tucker. "I'll bet a shad I've got a goat that'll beat any cow you've got in giving milk or eating brush."

"Have'nt had much to eat lately?" asked Jones, who stood at Tucker's elbow.

"Great on eatin' brush, they say," responded Tucker. "Don't need any bush scythes where they keep 'em."

"Did they come from the Jarseys?" asked Jake Frink, who is not very well posted as to the breeds of cattle. "They kinder look as if they had been living on pitch pine and sand."

"What oxen you'll raise out of them animals!" said Tucker, in a glow of admiration.

"I'd like to see 'em yoked up with some wharf rats that lately come up from Shadtown. I guess they'd take the premium at the next fair," said Jones, who grew facetious.

"The Squire'll be exhibiting rat butter next fall, and git a premium on't, too, see if he don't," said Jake Frink.

There hasn't been such a stir in Hookertown since my first subsoil plow, some dozen years ago, or more, as my Jersey cattle have made. The contempt, if possible, is still stronger, as this conversation of my neighbors last spring shows. But the old subsoil plow still lives, and keeps nosing round, and I guess the Jerseys will stand it. I have had visits about every day since they arrived. A dozen men at the barn-yard gate is nothing uncommon. The White Oakers stop their coal carts on their way home to study the new cattle. Kier Frink thinks there must be some deer blood about 'em. Occasionally a man comes along who knows the stock, and wants to know if it isn't thoroughbred. Rev. Mr. Spooner, who has visited the Channel Islands, thinks they are about equal to anything he saw there. Deacon Smith has offered two hundred dollars for the heifer, but the weight of opinion in Hookertown is decidedly against the Jerseys. Hookertown is not fond

of new things. The Jersey cows are small, thin, and their milking qualities are fabulous. The general opinion is that they come from the pine barrens of New Jersey, and are a new device of speculators to humbug farmers. Jake Frink's experience in Tafeu and other boughten manures is still remembered, and the old birds in these parts are not to be taken a second time with chaff. Meanwhile, Ossipee and his mates have gone to pasture, and must stand upon their own merits. It is somewhat unfortunate that the claims of the Jersey breeders are misunderstood. An old-style farmer breeds natives for beef, for working cattle, for calves, milk, butter, and cheese, and a breed doesn't amount to much with him unless it meets all these ends. He sees a Jersey cow, weighing five hundred or less, and a yearling bull that he could put in his lumber wagon about as easy as he could a calf. He exclaims, "It is all nonsense to have such trash upon the farm. They won't make oxen; the calves are no bigger than woodchucks, and they are worth nothing to fat, for there is next to nothing of 'em when made into beef." The Devon breeder, with his sprightly team, walking off almost as fast as horses, turns up his nose at the Jerseys. They will never make working cattle. They are homely in color, lacking in size, and can't endure much. "What fools men are to buy Jerseys!" The admirer of Short-horns is still more disgusted with our little favorites. He can make a thousand pounds of clean beef on one of his frames in two years. "Why should sensible men bother themselves with such paltry rats! If you are going to make beef, take something that will make it, and see it grow."

Now, I do not see why we may not breed cows for butter just as well as for beef, or for large quantities of milk, or to give us sprightly red working oxen. There is certainly need enough of it, for butter is about the dearest among farm products. If I wanted everything in one animal, I should not breed Jerseys, though I have seen very fair grade Jersey working oxen; and I have eaten as good beef of this stock as ever came to market. I want good, rich milk for my coffee, cream for my strawberries and other fruits, and golden butter for my johnny cakes and lima beans. If there is any animal that can equal the Jersey cow in giving rich milk, I have not found it. Just how this breed came by this quality I may not be able to tell. Titus Oaks may be right or wrong in laying it to the buffalo of America. It shows a pretty keen scent to smell a buffalo track after two centuries. But of the fact that this breed gives richer milk than any other, there can be no doubt. They will make more rich cream and butter out of a given quantity of fodder than the Durhams or Devons. There is, indeed, a difference among them, as there is among other breeds. But they as uniformly give rich milk as the Short-horns give large carcasses of good, juicy beef. There are multitudes of men, and the number is steadily increasing in our cities and villages, who keep but one or two cows for family supplies. They do not want to sell milk. They do not want skim milk for the pigs. They want good milk for the baby, plenty of cream, and butter of the best quality for the table. They have fastidious tastes, it may be, but they have them very decidedly, and are willing to pay for them. Now, I claim that it is a farmer's business to supply the market with those articles in his line that are most in demand. If scrub cows are going out of fashion, and nobody wants them who can get anything better, what is the use of my

raising them? If men who can afford to pay for it want their milk condensed, the Jersey cow will do it about as well as Gail Borden, and it won't cost half so much. I don't mean any reflection upon that gentleman, or the rival milk condensers, but I rather guess if the Jerseys had been better known, their occupation would have been gone. These folks, too, who want family cows, haven't a great deal of barn room, and they want the cow put up in the smallest compass. The Jersey hits this nail exactly on the head. You can't put her in a hen-coop exactly, but you can put her and the coop into a common stall without overcrowding. They want something, too, that is just a little handsome, and fond of being petted, to keep company with the well-groomed horses, and to share the attentions of Levi, when he has put the last touch upon his sleek team. I know there are some very bad looking Jerseys, with ugly heads, sharp bones, and thin, lank carcasses. But take them as a race, they are fair to the sight, and an ornament to the farm-yard. A little oil-meal inside and the brush outside improve their looks, and help the butter wonderfully. Their mealy mouths, perhaps, indicate the want of meal. At any rate, it is a pretty safe rule to follow. There are several different styles of Jersey cattle. I like the wild Jersey type the best, which is very popular with some of our best breeders. They have black tongues, black noses, and mealy muzzles. The horns are black, small, firm, pointed, brown near the head, but not waxy. In shape, the horns have but one curve (except that the horns of females turn back a little at the very end), standing high—as high as at right angles with a line drawn from the mouth to the ear, forming a curve of nearly half a circle. The foundation color of the females is chocolate, dark brown or olive along the back, and a brownish gray between the horns and eyes. The hair is soft, silky or woolly on the body, through which there project, after the calves are four to eight months old, long, coarse hairs, often tipped with white or brown, sometimes all black, or other color. The males are much darker, nearly black, but neither males nor females have any white spots, and both change color. The skin, udder, teats, and inside of the ears, are olive brown, with a brown stripe in the ear, and the ends of the tail terminate in a brush, like the American buffalo. There is no coloring matter on the end of the tail, but it is dry and scaly. Then they have a wild look and action, not easily described, which I suppose Titus would say smelt of the buffalo. Cattle of this type are as handsome as deer, and will long be in demand at high prices, for folks will buy them as they do pictures—just to look at.

Hookertown, Conn., } Yours to Command,
June 15, 1869. } TIMOTHY BUNKER, ESQ.

How to Make Good Pastures.

Many an acre grazed will not carry a sheep. Other acres will give full feed to a cow, each, all through the summer, and be pretty good mowing when frost comes. Both kinds pass under our observation every day. The difference is not in the original character of the land, for it is found on adjoining farms, with the same formation, and with the surface and subsoil looking just alike. There is a big pasture of 50 acres, where fifty sheep would lose rather than gain flesh during the summer. The oldest inhabitant does not remember when it was plowed, seeded, or top-dressed. It has always been

pastured—generally by cows—until it ceased to yield feed enough to support them. There is some grass upon it now, but more mulleins, five-fingers, and moss. The grass is nearly choked out. But the soil was originally good. The trees that still stand on the borders are heavy oak and chestnut timber, which do not thrive on poor, thin soils. Yonder is a field of five acres, that pastures five cows, and has done it for several years. The grass is luxuriant, and grows much faster than the cattle can consume it. It was stocked down five years ago, after several years of heavy cropping, with vegetables and tobacco. Of course it was manured heavily, and very thoroughly cultivated. The land will feel that treatment, and make grateful returns, for a whole generation to come. It is far within the limits of truth to say, that one acre of this five is worth the whole fifty of the other for the purpose of sustaining animal life and making salable products. The one does not pay taxes; the other pays them and a handsome profit. Now we do not believe there is any royal road to thrift with these run-down pastures. Top-dressing will not answer, for the grass seed is not there to vegetate. Seeding will do little good, for the grass already there is growing small by degrees. If the soil is fair, arable land, plow, plant, manure, and cultivate, and you give it a new start. That old sod of dead grass roots and moss rots, becomes plant-food, and sends up joyful harvests. But this will cost money, spent in manure, seeds, and labor. You say, Of course it will, and if you get your money back again, principal and interest, you ought to be satisfied. If by spending \$50 upon a worthless acre of pasture you make it pay you the interest on \$60 above the working expenses, you are doing a good business. We must use our capital in farming just as we do in other enterprises. We must bury it as we do our wheat, that it may live and bear fruit. If we buy stock in a railroad, or in almost any enterprise, the capital dies for a time. We do not lose faith if it does not come back the first or second year. Spent in renovating old pastures by plowing and manuring it usually gives full interest the first year, and puts us in the way to secure dividends for years to come.

The Intermixture of Seeds.

BY AN OLD SEED GROWER.

Varieties of beets, cabbages, turnips, and all other kinds for seed, should be set as far apart as possible, to avoid intermixture, especially cabbages, no two varieties of which should be seeded within half a mile, certainly never nearer than eighty rods. Beans may be planted nearer together, with less danger of mixture, than most other seeds. Any varieties may be grown close together, free from mixture, if they do not flower at the same time. Cucumbers, melons, and squashes, will not mix, as is supposed by many, neither will the watermelon mix with the muskmelon. The large, thick, white seeded squashes, with fleshy stems, like the Boston Marrow and Hubbard, will not mix with the flat, drab seeded ones, with angular stems, like the Winter Crookneck, Summer Squashes, or common yellow pumpkin; but these latter will mix together. Whatever mixture takes place in the seeds of cucumbers, melons, and squashes, tomatoes, egg plants, and peppers, will not appear in the fruit the first year. It is in the crop from the seeds of different varieties of these which have been grown near together that the mixture will show itself the next year.

The Pigeon Hawk.—(*Falco Columbarius*, Linn.)

This beautiful little falcon inhabits the whole length and breadth of the United States, from Canada to Mexico, from the Atlantic to the Pacific, and we presume it is no stranger in icy Alaska. Beautiful and graceful as it is, it merits only slaughter from civilized man, for it is one of the most persevering enemies of all his feathered friends not large enough to avoid its keen sight, its swift flight, and its wolf-like rapacity. Doves and pigeons, robins and blue-birds, wild ducks and half-grown farm-yard poultry, are alike its victims. The Pigeon Hawks migrate with their prey to a notable extent, and are most abundant in the Northern United States, in spring and fall, though a few stay through the year in New Jersey and Southern New York, and other States on the same isothermal line, especially if the winters are mild. Our engraving shows the markings very well. This specimen was shot with a blue-bird in its talons, and was so stuffed. "The entire upper parts are blueish slate color, every feather with a black longitudinal line; forehead and throat white, other under parts pale yellowish, or reddish white, with longitudinal lines of brownish black in each feather. The tail feathers are black, tipped with ashy white, and there are spots of white upon each feather, forming cross-bands of white, or pale ferruginous color. The cere (or bare waxy skin between the bill and the feathers) is yellow, the bill blue, and the legs yellow. The bird flies with a succession of rapid strokes of the wings, soaring but little. It not only swoops down upon its prey from a commanding position, but pursues and strikes almost everything upon the wing. No doubt if birds were scarce, it would take kindly to moles and mice, but we do not know of its doing so. It breeds at the North, doubtless within the limits of the Union, but the habits of the birds when breeding seem to have been most accurately observed in Labrador. They make their nests in low fir trees, and lay three to five eggs, of a dull, yellowish brown color, with irregular dark reddish brown blotches and specks. The total length of the female is 12 to 14 inches; of the male, 10 or 11. The young, when of nearly or quite full size, vary considerably from the adult birds in markings, but are not difficult to recognize. These little rascals are associated with two other species, as companions in guilt and merited retribution, having much the same character. These are the Sparrow Hawk and the Sharp-shin, the lat-

ter being by far the more common, at least in the Eastern States. Hawks may be easily snared if they are seen to strike, and can be made to drop their prey. Mr. Bell tells us he

The Blue-bird.—(*Sialia sialis*, Baird.)

Among the insect-eating birds which it is easy to attract around our dwellings and to domicile in our orchards, none has greater claim to uniform favor and kind treatment from man than the blue-bird. Its coming is often the very first indication of the breaking up of winter, and it is always welcomed as a harbinger of returning spring. It seeks its old familiar haunts among the leafless boughs, and watches with jealous eye the least appearance of life among those depredators upon the foliage in the shade and shelter of which it anticipates so much enjoyment. We forget its note when summer comes, although it gives us so much pleasure in March, or we remember it only as we do those bland spring days when the sunshine is rejoiced in as thoroughly as we avoid it now. The male blue-bird is of a uniform azure blue above, and reddish brown beneath, being white about the abdomen and beneath the tail. Its legs and bill are black. The female has similar but duller plumage, and the brown of the breast tinges more or less the feathers of the head and back. The length is about six and three-quarter inches. Blue-birds build in hollows of any sort, like a last year's woodpecker's hole, a hole in an apple tree where a limb was removed at a wrong season and decay has followed, a shelter under the eaves of a veranda, or a box of almost any shape, six feet or more from the ground. They lay four to six eggs, which are of a faint blue color, with a shade of green, and are usually hatched late in May or early in June. Two broods are reared the same season, usually in the same nest. The young are peculiarly exposed to be eaten by cats, snakes, and other animals or birds of prey, as the nests are often very poorly concealed. The food of this bird, when insects are abundant, is almost exclusively confined to them. It does but little damage to fruit, and consumes immense numbers of caterpillars and other worms, flies, and grasshoppers. Blue-bird boxes should be about six inches square, with inch-and-a-quarter holes, and they should be placed upon fruit or shade trees where cats cannot easily get at them. The possession of these houses may be disputed with the blue-birds, by the wrens, but these, too, are so useful and desirable that an easy solution of the difficulty must suggest itself to almost every one. It is to provide bird-houses for all. Wrens seem to prefer unsheltered houses, while blue-birds always choose the seclusion of shade and foliage.



THE PIGEON HAWK.—(*Falco Columbarius*, Linn.)

is almost always successful when he sets a spring pole with a noose, laying the bird which the hawk dropped close under the trip. The hawk



THE BLUE-BIRD.—(*Sialia sialis*.)

is almost sure to return to look after the bird he killed or wounded, and will, if he tries to pick it up, be as surely caught by the leg.

Walks and Talks on the Farm—No. 67.

In answer to a letter asking his opinion in regard to summer-fallowing for spring barley, John Johnston writes me: "I think you would do better to plow your two-year-old clover sod only once this fall for barley, and the later you plow it, the better. If you fallow it, it would be too fine, and the spring might be such that it would be difficult to get the land in good condition for barley. Fallowing as you propose would answer well, if, after that, you would throw it into two furrow ridges before frost set in. Then it would work to perfection in spring. I never saw such barley grown hereabouts as I raised by throwing corn stubble in three furrow ridges in November, and harrowing and plowing the land again in spring before sowing. The last crop I raised in that way was 40 bushels per acre, and over 51 lbs. per bushel."

This is undoubtedly a capital plan. My own idea was to plow it up as late as possible in the fall, and leave it rough for the winter; but plowing it into ridges must be better.

Mr. Johnston's land is now so clean that it is difficult for him to realize the position in which those of us who have neglected farms are placed. We *must* do something to kill the weeds. Plowing the clover sod late in the fall *may* give as good a crop of barley as if we summer-fallowed it. But I doubt it. And at any rate by plowing it about the first of August, and again after we are through wheat sowing, and again just before winter sets in, we can do a good deal towards cleaning the land, and we lose no crop, except a little fall pasture. And there can be little doubt that this thorough stirring and exposure of the soil for eight or nine months (from August to May) will do much towards enriching it by developing the latent plant-food.

Perhaps a better rotation would be this: Mow your young clover for hay and the second crop for seed. And as soon as the crop of seed clover is drawn in, spread twenty loads of rich, well-decomposed manure per acre on the sod. Then go over the field once or twice with a set of J. J. Thomas' slanting-teeth harrows, for the purpose of breaking the lumps of manure and making it as fine as possible. It is said that manure makes grass rank, and imparts a disagreeable flavor to it, so that cattle do not like it. I think this is due simply to the fact that manure is seldom spread evenly over the land. When it lies in lumps the grass has a bad flavor, but if it is evenly spread and worked over with Thomas' harrow, no such effect will be observed. In fact, if the manure is well rotted and properly applied, the grass will be very sweet and succulent, and the cattle will greatly prefer it to grass that has not been top-dressed. This I know to be a fact.

The next spring, after top-dressing the clover the previous fall, you will have a great growth of clover and grass. Pasture it until the middle of June, and then plow it up as you have leisure. Fallow the field as thoroughly as you can, and the next spring plant it to corn. Cultivate the corn about once a week for two months, and kill every weed. If any thistles show themselves in August, cut them out with the hoe. After the corn is harvested, plow the stubble, and sow the land to wheat, barley, or oats, the next spring, and seed down with a peck of clover seed per acre. If the manure is good, I think this plan would give a big crop of corn, say 80 or 90 bushels shelled corn per acre, and 40 or 50 bushels of barley, and a great growth of clover afterwards. And the land

would be as "clean as a garden" should be.

Do not tell me that it will not pay. I know better. As you farm it now, you get about 30 bushels of shelled corn per acre, on the best parts of the field, 15 bushels on the sandy knolls, and 5 bushels on the "clay spots," and sometimes nothing. Is it not so? Then you get 15 bushels of barley per acre, or if the season happens to be very favorable, 20 bushels. Your wheat afterwards is about 12 bushels per acre. And you are now paying a man \$28 a month and his board and washing, to help you put in and cultivate and hoe these crops, and you will have to pay \$2.50 to \$3.00 a day for help to harvest them. And furthermore, your land is getting poorer and more weedy every year. A summer-fallow, followed by a well-cultivated corn crop, would clean it thoroughly, and put it in shape for further and rapid improvement.

The fact is, our farms are suffering for want of thorough tillage. We only half work the land. We spend a great deal of time and labor in attempting to kill weeds, but we do not quite accomplish the object. The weeds recover from the blows we have given them, and our time and labor are lost. Another hoeing, or another cultivating, or another plowing, would have made an end of them, and for want of this we lose all that we have done. Our land is no cleaner than it was a dozen years ago, and it will be no cleaner a dozen years hence, unless we change our system of cultivation.

As long as labor is so high we cannot afford to employ it in raising poor crops. And there is not much prospect of labor being permanently cheaper. It is advancing all over the world. And certainly no man whose heart is in the right place can be sorry that such is the case. The problem which the American farmer has to solve is, how to raise cheap grain, cheap meat, and cheap wool, with high-priced labor. We have an almost unlimited extent of land, and there is no necessity for cultivating it so excessively. We can afford to let half of it rest two years out of three. And the solution of the problem will be found in this direction.

It should never be forgotten that our profits come from labor and not from land. And our chief aim should be to use labor to the best advantage. To use it in raising a crop of wheat of 10 or 12 bushels per acre is certainly *not* using it to the best advantage.

I wish every young farmer in the United States would read Thomas' work on Farm Implements and Farm Machinery. It gives the clearest explanation of the principles of mechanics I have ever read, while the illustrations, being taken from practical farm life, add greatly to the interest and usefulness of the work. A knowledge of these principles would be of the greatest use to every one who works on a farm. It would save a great amount of time and labor. And it certainly would not hurt our inventors and manufacturers to study the work. We should not then be so often annoyed by breakages. They would know where the strain comes, and provide for it. Now, we frequently have great strength where it is not needed, and a rotten bit of casting in the most important part of the machine.

A few months since I tried a new ditching implement, the frame of which was a heavy piece of cast-iron, with holes in it for strong wrought-iron teeth. It appeared exceedingly strong. We put on a pair of horses and had not gone ten rods before we struck a stone, when the casting snapped like a pipe stem. Why? The last, outside hole was drilled about half an inch from the

end, and about a quarter of an inch from the outside, and that was all there was to hold it. Any other tooth in the implement would have stood one hundred times the strain. The casting could, just as well as not, have been made six inches long, when it would have been as strong as the other parts of the implement. The extra cost would not have been twenty-five cents. Take another case. Three or four years ago I bought a gang-plow. The frame is made of cast-iron, and it runs on wheels which can be readily moved so as to regulate the depth and width. It is an ingenious thing, well built, and of the best materials; the points, mould-boards, and landsides, are all that can be desired. In short, it is a capital implement—only it won't work! Each plow, if drawn singly through the soil, would do good work,—as good as could be desired; but when three or four of them are attached to a triangular cast-iron frame, and the line of draft is in the center of the first plow instead of in the center of the set of plows, the whole machine has a tendency to draw out straight, and the last plow will take no land. In other words, the side draft is so great that all the plows have a tendency to run into one furrow, with the points of the plows merely running sideways to the land. It seems to me that a little study of the principles of mechanics would have enabled the manufacturers to have avoided this error, and given us a good gang-plow. There appears to be no reason why a set of gang-plows cannot be made to do good work, and yet it seems to be the general opinion that, so far, all the gang-plows we have had have proved unsatisfactory. I think this is owing to two reasons; not making the shanks high enough to avoid clogging, and not properly adjusting the line of draft. They should be made so as to take three furrows only, and to be drawn by four horses abreast. Let them be made of steel and provided with coulters, when necessary. Such an implement would certainly be very useful for working over our summer-fallows, and for plowing in the spring, for barley, or oats, or wheat, any land that has been well and deeply plowed the fall previous.

It seems to be proved that merely stirring the soil is not so beneficial as turning it over with the plow. And it appears that the power required to lift and turn over a furrow is far less than the power required to cut it. It would seem, therefore, that a gang-plow, if properly constructed and made of steel, with sharp cutting edges, would require no more power, and do far better work, than a cultivator.

At the Farmers' Club, yesterday, we had a talk about weeds and how to destroy them. It was admitted that something must be done, or our farmers would soon be overrun with thistles, red-root, and quack grass. One gentleman stated that on some of the light sandy soils in Irondequoit, the quack grass had obtained entire possession, and that he thought the land would have to be given up to it. It made pretty fair pasture. He thought it impossible to kill it on sandy soils.

Five years ago, I had a field of sandy land that was full of quack. It was in wheat, and I did not seed it down with clover, but immediately after harvest I plowed the field, and harrowed and cultivated it; then plowed it again, and harrowed and cultivated; and about the first of December plowed it again, and left it rough for the winter; the next spring cultivated it, and plowed again; then cultivated it once or twice more, and harrowed repeatedly. By this time it was as loose as an ash heap, and

the harrows and cultivator (with narrow teeth) pulled the quack to the surface. We then raked it into heaps and burned it on the land; then plowed the land again, and drilled in beans. We cultivated the beans thoroughly with a Johnston cultivator, which has narrow teeth, and hoed them twice. I do not think that to-day, except on the borders of the fences, where we could not get at it, there is a spear of quack in the field. Of course some of the members laughed at my plan of killing quack. They want an easier method. I have known quack killed by double plowing; that is, by running a second plow in the furrow made by the first plow, and turning up the soil eighteen inches deep, and then turning the first nine inches of soil containing the quack to the bottom of the furrow, and throwing another furrow nine inches deep on top of it. This method was tried by John Hilditch, an intelligent English farmer, and the result was satisfactory; but I believe he concluded that on the whole it was not much cheaper than the old-fashioned way of pulling it out by repeated plowings, harrowings, and cultivatorings. If a Michigan double plow would run deep enough, it might accomplish the same thing at one operation as Mr. Hilditch did at two, and with less than half the cost, as he found it necessary to put four horses on to the last plow. But on sandy soil it would be necessary to cover the quack very deep; and when these sandy soils rest on a poor, hungry subsoil, such deep plowing would prove injurious, at least for the first few years. Better kill the quack honestly, by working it out. Our dry, hot climate gives us a splendid opportunity to get rid of this pest, and in killing quack by thoroughly working the land, we kill all other weeds at the same time. It will enrich the land, and furnish the finest seed-bed. The land will not forget it for years.

It will not do to depend on thorough tillage alone. This was Jethro Tull's mistake. We need manure besides. But the means necessary to kill the weeds will mellow the soil, develop plant-food, and give us better crops; and these crops will enable us to make more manure, and so we can keep on enriching the farm. Hence I contend that while weeds, if neglected, are a curse to the land, they will prove a blessing to the farmer who has energy enough to use the proper means for destroying them. The crop of beans that grew on this field paid the whole expense of killing the quack, and left the land in prime order for wheat, and I have had some capital crops of clover and grass since. To abandon good dry land, worth \$100 or \$150 per acre, to quack, is not to be thought of. Twenty dollars an acre will kill it so that it will not trouble us for ten years to come, and we get rid of other weeds at the same time. Will not the crops be two dollars an acre better—or even five dollars? And will it not pay?

A gentleman in Canada writes me that wood is becoming as scarce as on the Western prairies, and that farmers are anxiously asking, "What shall we fence with?" "Stone walls," he adds, "do not seem to suit this climate. They are apt to be heaved up by frost, especially those running east and west, owing to the ground thawing more rapidly on the south than on the north side. I notice some attempts to grow willow and thorn fences, but no care seems to have been bestowed upon them since planting, and they are now useless; and 'What shall we fence with?' is yet unanswered."

In the neighborhood of cities, where land is high and the farms necessarily small, we shall

have to adopt the soiling system, and this will do away with the necessity for inside fences. Where land is cheap, and where, consequently, it will not pay to soil animals, we shall have larger farms, and can then have large fields, and thus save considerable expense in fencing. A field of ten acres requires sixteen rods of fence per acre, while a field of one hundred acres requires only about five rods of fence per acre. I know you object to large farms. But I am at a loss to see how we are going to get along without them. The Pacific Railroad will open up millions of new farms, and we have already ten times as much land as we have people to cultivate it. If, by the aid of machinery, we can cultivate a large farm at a less cost per acre than a smaller one, and if there is vastly more land than there are purchasers, why should we deprecate the manifest tendency to larger farms? Depend upon it, as farmers' sons receive a better education, they will want to do a larger business. The profits from a fifty-acre farm, devoted to ordinary farm crops, and so managed that its productiveness is kept up from the farm itself, and not by the purchase of fertilizers or feeding stuffs, are not large enough to satisfy the necessities of an educated man. And I assume that he manages his farm to the best advantage. Prices are high enough for consumers, and the profits of good farming, on the whole, are as large as they ought to be for the good of the country. The business is a good business, and a respectable one, but such a man does not do enough of it to afford him an adequate support. This is not a popular doctrine, but it is true.

Of course an intelligent, educated man can make a good deal of money from fifty acres of land; but it will not be by ordinary farm crops managed in the ordinary way. It cannot be done by depending on the usual sources of fertility on the farm. A farm *can* be kept in a high state of productiveness from its own resources, but to do so we must sell a comparatively small portion of the crops grown. Three-fourths of all the crops must be consumed on the farm. Mr. Lawes' unmanured wheat-plot produces on the average fifteen bushels of wheat per acre every year. In other words, the natural resources of the land are capable of giving fifteen bushels of wheat per acre every year. If a crop of wheat was sown every third year, and during the other two years the land was in clover, which was all returned to the land, we *might* get thirty-five bushels per acre. But this is probably the limit of productiveness from ordinarily good land, that receives no extraneous fertilizing materials. By supplying manure, we could get thirty-five bushels every year,—at least the soil can be made capable of doing so, or of producing even forty or fifty bushels; but the season may be such that the plants cannot use their supply of food to advantage. As a general rule, however, we might expect to average thirty-five bushels per acre. In other words, we can, by the use of purchased manure, get *every year* as large crops as we can get *every three years*, by depending on the natural sources of fertility. Liebig, with a flash of genius, saw this truth when he wrote "Ammonia is Time," long before Lawes and Gilbert demonstrated the fact by experiments.

This truth lies at the basis of High Farming. By fallowing, and growing clover or other green crops, we can get all the ammonia we need to produce large crops of wheat. But it will take three or four years to do it. Those writers who sneer at "gnano and oil-cake," and who recommend farmers to depend entirely on home re-

sources, do not seem to understand this matter, for most of them, at the same time, recommend small farms; while the truth is, if we adopt *slow* farming, we must have large farms, or we shall have small incomes. If we have small farms, we must farm *fast*, or, in other words, we must adopt High Farming. There is no escape from this conclusion. The only exception is in the case of new land that has been heavily manured by nature, and where the farmer depends on this accumulated manure for the first twenty or thirty years after clearing up the land. When this manure is used up, he must depend on the plant-food, gradually developed from the soil by tillage, on the ammonia and nitric acid furnished by rains and dews, and on what the soil and plants can absorb from the atmosphere. This is *slow* farming. And it is the kind of farming that must be generally adopted. It means, in its best aspect, summer and autumn-fallowing, growing a large area of clover and other crops for plowing under or consuming on the land, and raising large crops at long intervals. It is the kind of farming now generally adopted, except that we do not work the land so thoroughly as we should, and do not give the soil time to accumulate a sufficient quantity of ammonia and other plant-food for the production of a large crop. We try to raise crops at too short intervals, consequently the crops are poor, and the profits small.

On the other hand, High Farming means underdraining, thorough tillage, irrigation, and the purchase of manures or feeding stuffs. It means well-bred animals and high feeding. It means soiling in summer, and roots in winter. It means large crops every year, and crops that can be turned into money. There is no summer fallow, and no plowing under clover.

Summering Young Calves.

The first summer is the important one for calves. If they come through it in good, sound, thrifty condition, their future rearing is easy. If they get pot-bellied, out of shape, and stunted, a year will be lost in their development and growth, and they will never be so good as they would have been had they kept growing from their birth. The secret of success in raising calves is to keep them thrifty *from the very start*. Let them never get a check, and they will pay in the end for the extra care. A frequent mistake is to turn calves out to grass too early. They have to eat a large amount of succulent food, to supply to their unperfected digestive organs a sufficient amount of such nutriment as they can use, and they develop enormous paunches, out of all proportion to their frames. By frolicking they expend, in muscular waste, material that should go to help their growth, and by becoming overheated, they disarrange their entire systems. Later in the season, on stunted, drought-parched pastures, they are often as much starved by the want of food as they were earlier by the want of ability to make complete use of what they did eat.

Calves should not be weaned on grass, unless constantly with their dams, and receiving a bountiful supply of milk late into the season. Good rowen hay, (or cured *grass*.) which contains a large proportion of nutriment that the young stomachs can easily appropriate, and a liberal feeding, twice or three times a day, with skim-milk—withholding water, so that they will drink the more milk—is the best bill of fare for at least four months. At the end of that time, they may, unless the weather is excessively hot,

be gradually accustomed to a short and fine pasture, until they will thrive on that alone.

About Smutty Corn.

The smut in Indian corn, which has long been an annoyance to farmers, possesses an additional interest, now that serious and fatal cat-



Fig. 1.—SMUTTY CORN—YOUNG.

tle diseases have been traced to the use of corn affected by smut. Smut is the work of a microscopic fungus, one of those obscure forms of



Fig. 2.

vegetation which, like mildew, lives within and upon the tissues of other plants. The presence of these fungi in grains not only often causes them to totally change their shape, but they take on properties entirely foreign to the grain in its natural state. Thus,

the ergot of rye is a grain, which by the presence of a small fungus becomes different in appearance from an ordinary grain of rye, and possesses medicinal and poisonous properties which are among the most remarkable of those known to medical men. Other grains are known to be similarly changed, and it would not be at all strange to find that Indian corn, when it is attacked by a fungus growth, is deleterious in a marked degree. The trouble in corn first manifests itself in a remarkable distortion of the young kernels. They swell out into enormous leathery bags, which assume a peculiar lead color, and ultimately burst open and discharge a brownish black powder, or "smut." This powder is the reproductive grains or spores of the fungus which has done the mischief, and is all of the



Fig. 3.—AN OLD EAR.

plant that can be seen by those not skilled in microscopical observations. The appearance of the diseased grains is well shown in figure 1, which is from an engraving by Faguet. Figure 2

shows a very young grain, with its envelops or chaff cut across, to exhibit the internal disorganization which takes place. In fig. 3 we have the appearance of an ear of smutty corn, much reduced in size, taken from the stack from which some animals in Massachusetts were fed with fatal results.

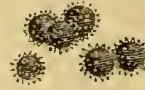


Fig. 4.

Observations are needed to decide whether the injury to cattle is due to eating corn that has been changed by the fungus, or whether the spores, the "smut," themselves are deleterious. The subject is one of great importance, and it is to be regretted that in this country we have no botanist who has made these minute plants, of which the smut is one among hundreds, a special study. The spores or smut grains, when magnified, are found to be beset with numerous points, as shown in figure 4. The name of the fungus is *Ustilago Maydis*; the genus *Ustilago* has species which produce smut in wheat and other grain, as well as in plants not at all related to the cereals. Moist seasons are peculiarly favorable to the development of these small fungi, and we often find smut quite prevalent in one season, while the same farm may be free from it the next. It is quite probable that the same treatment that is used for seed wheat to prevent smut, if generally applied to seed corn, would do much towards preventing its occurrence. This is, to wet the corn before sowing with a solution of sulphate of copper (blue vitriol), and dry it with lime.

Hay and Grain Wagons.

Every farmer needs a "rack" of some sort to transport hay, grain, and straw. Very simple ones are for many purposes quite as good as more complicated affairs, provided the hay, etc., is not to be moved over very uneven ground, or to be exposed to the casualties of village or city streets. In proportion, however, as the loads are likely to be shaken and roughly handled, substantial "racks," or "ladders," are necessary. The patterns are numerous. We gave in the May *Agriculturist* a description of a Pennsylvania hay wagon of simple construction, and herewith we show one frequently seen and used in Rockland County, N. Y. The one from which the picture was taken is owned by Mr. J. W. Haring, of Rockland.

It requires a fair mechanic to make a good one, and it is rather heavy, but a single able man can put it upon the running gear. The ladder in front and the two rear poles may be removed. The former is hinged to the frame and is laid down when the wagon is driven without a load. The poles may be unstepped and laid in the bottom. The rest is all fastened together. There is a frame as long as will go well on the wagon, and this rests upon the bolsters; raised a foot or 14 inches above this, at both front and rear ends, are two cross-pieces, and there are two others crossing the middle of the frame. These four cross-pieces extend beyond the wheels, and decide the width of the hay rack, which may be greater or less, according to the width of the track, the size of the wagon, and the size of the door and gateways the wagon is expected to pass with a load. Between these cross-beams

on each side, connecting those before and behind the fore and hind wheels respectively, pass three steamed and bent strips of three-quarter-inch oak about three inches wide, and three inches apart, in the manner shown in the engraving. These are connected at about the middle by one or two strips bolted to them, and the two middle cross-pieces are connected on each side by slats laid between the curved wheel-guard pieces, as shown in figure 2. This also shows the manner in which the wheel-guard strips are usually bolted to the cross-pieces.

Altogether this forms one of the safest and handiest wagons for carrying hay, etc., we know of, especially where a great deal of this business

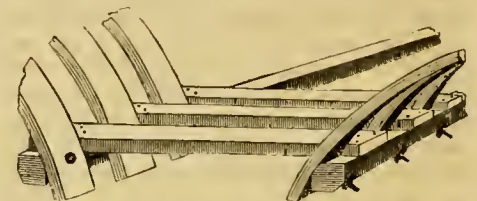
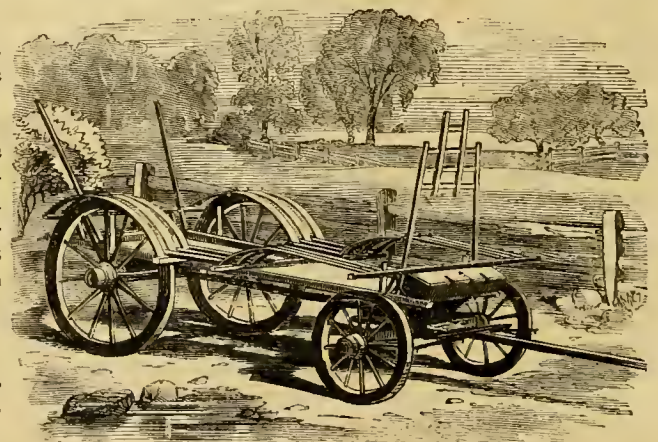


Fig. 2.—CONNECTION OF WHEEL-GUARDS.

is to be done. It is not a "rigging" to be thrown on and off, but it is easily adapted to any wagon, and forms a rack which will safely carry all that two horses ought to draw, over any road they ought to draw it.

Dimensions.—The entire length of the rack from which our drawing was taken is 12 feet; its width 6½ feet. The rear poles are 6 feet long, and the ladder in front is 6½ feet high. The pieces comprising the frame, which is of oak, are 2¼ × 3½-inch stuff. The cross-pieces which support the wheel-guards are 3 × 3-inch strips, 6½ feet long. The cross-piece at the extreme rear—which projects on each side beyond the beams or bed-pieces, forming belaying pins to bind the pole rope to—is 1¾ × 1 inch. The wheel-guard strips are 2½ inches wide, and ¾ inch thick. The ladder is furnished with four cross-pieces; the outer uprights are 3 × 1¼ inches. These are hinged to the bed-pieces of the frame by an iron rod, passing through both frame and uprights, and secured by a nut. The inner uprights are 3 inches by 1 inch; the cross-pieces 2½ inches wide, and ¾ inch thick. They are each cut out a little in the middle to receive the but of the pole used for binding on the load. The front and rear

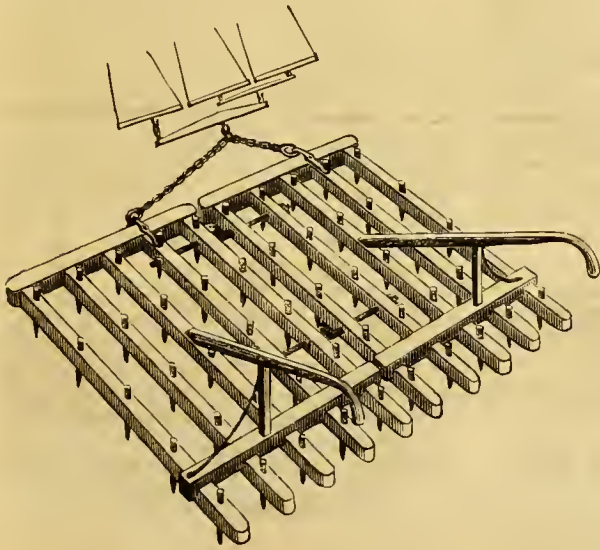


ROCKLAND CO. HAY WAGON.

cross-pieces supporting the wheel-guards are raised one foot above the frame by posts, mortised into both frame and cross-piece, and braced with strong iron braces. A tool-box is fastened to the front of the frame, which has its hinges in front, so that it may be the more readily opened when the wagon is loaded with hay

A Fallow Ground Harrow.

One of the subscribers of the *American Agriculturist*, a large Western farmer, who has no doubt paced many a weary hundred miles behind a harrow, commends very heartily a large light double harrow, which he uses, and of which he sends us the drawing and description here given. The harrow is obviously not intended for heavy clays, stony land, or for tearing sods to bits, but for light fallow ground, as he states, and for this purpose it seems admirably adapted, for its sweep, as ordinarily drawn, must be about ten feet. We let the farmer make his own statement: "I send you the rough draught of what I consider the best harrow in use—better than the one given on page 172. The more ground you can 'strike' on a day, the better. To have a large harrow, use three horses, and put both horses and men through. This harrow has handles, which are a great convenience, not for men to go to sleep on, but to use in freeing the harrow of corn stubs in harrowing oats, of briars, sticks, weeds, and dead clover, in harrowing fallow land. After once going over, you can collect the rubbish in piles, haul in, or burn on the field. Two of these harrows can 'strike' (harrow in) forty acres of oats in one day, if the horses are fresh, and the men keep their harrows free. I have heard of fifty acres being gone over in one day." It



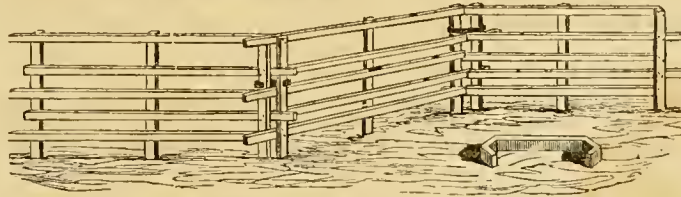
A FALLOW GROUND HARROW.

is made of $2\frac{1}{2}$ -inch square stuff. The heads are mortised together, the tooth-bars being $7\frac{1}{2}$ inches apart, or 10 inches from the centers, and the cross-piece at the rear is notched out to fit upon the bars to which it is bolted. The teeth are of three-quarter-inch iron, the first row being set $4\frac{1}{2}$ inches from the heads, in each tooth-bar, and the other rows 10-inches apart, which brings the teeth equally distant all over each half of the harrow. We think it would be better if the hinges were long enough to make those in the middle no exception. The elevis or hook of the evener may be shifted to right or left, to regulate the evenness of the work.

Portable Fence.—Unpatented.

Many of the forms of portable fences which have merit are covered by some sort of a patent. These patent-rights are usually unprofitable to their owners, and after a few years all attempts at selling farm rights or introducing the use of the fences are given up. Still, the fact that the plan is patented remains,

and farmers are shy about adopting even the practical ideas, for fear some patentee will be down upon them for fees. So, as we publish none of this sort if we know it, we are the more happy to give what appears to be so ingenious and well-tried a plan of fence as the one figur-



BACHTEL'S PORTABLE FENCE.

ed. Our correspondent, Isaac Bachtel, Stark Co., O., writes thus: "Enclosed I send you a plan for a portable fence 'untrammelled with a patent,' invented by H. Bachtel, Esq., who has used it on his farm for the past sixteen years. He has one now about one hundred rods long which stands the storms as well as if set in the ground. You will observe that the boards are narrower and the spaces wider than in ordinary board fences. The ends of the uprights may be sawed off after the fence is set up, and this gives it a neater appearance." We suppose the panels are made of thirteen-foot strips. Mr. B. states they are of inch stuff, four inches wide. Pine would be best, probably; spruce would do. The uprights are of $1\frac{1}{4}$ -inch stuff, cut 4 feet 10 inches long, and the fence when done is 4 feet 8 inches high. The lower rail-strip is nailed on 6 inches from the end of the uprights. The first space is 5 inches wide; the second, 6; the third, $7\frac{1}{2}$; the fourth, 10; and 2 inches are left above the upper rail to be removed subsequently. In nailing on the strips they are made to project beyond the posts alternately on either side. (The extent of this projection is not stated, but we conclude 4 or 5 inches would be enough, though in the sketch sent, which we have in a measure copied, the length appears greater.) The end uprights are on different sides of the panel, and all the panels are exactly alike. To secure uniformity, Mr. Bachtel uses a frame, which he calls a "tressel," to make them on. This consists of three 4×4 scantling, 4 ft. 8 in. long, fastened together by two boards nailed upon the ends. Five sets of cleats or "stops" are nailed upon the scantlings upon which the lower edges of the rail-strips are to rest, and the board against which the lower ends of the uprights rest is $1\frac{1}{2}$ inch above the scantling. This tressel is 12 feet 9 inches long. The uprights lie over the scantling, which makes a firm support to nail against, and the whole thing stands upon legs two feet high. It will be seen that in each panel two rails extend beyond the post on one side and three on the other. When set up these lock together, and to prevent any motion they are secured firmly by iron clamps, one of which is shown enlarged in the foreground. They may be made of old wheel tires, or of $\frac{5}{8}$ -inch round iron. If the strips and posts are of the dimensions given, the clamps should measure 12 inches from inside to inside of the end angles. A portable fence is a great convenience to many who raise sheep, as the pasture may be fed off to much greater advantage by its use than when the sheep are allowed to roam at will over the whole.

Permanent Foundations.—Dry Cellars.

Men build houses on all sorts of ground, in fact, sometimes in the water. A good part of the houses in many of the large seaports of the world stand upon piles driven into the soft mud, below the surface filling, which is dry. In the country we generally have considerable choice of location; and if we can choose the kind of ground upon which to set a dwelling, it should be dry sand or gravel, sufficiently elevated to have the surface water as well as the rain which falls upon the roof naturally flow off. On such ground we may dig the cellar, lay the foundation, and put up the superstructure, without fear that there will be any settling or heaving by frost, or annoyance from water in the cellar or in the wall. On springy ground, on tenacious clayey subsoils, or even on soils of ordinary tenacity, it is always best, and often absolutely necessary, to provide the most thorough drainage. There are several common ways for accomplishing this. One is to dig a trench wider than the wall, fill it with small stones, and place the brick or stone wall upon it. This does very well, provided there is a sufficient outlet for the water which may collect in the trench. It is far better, however, to place a drain beneath the foundation wall. This may be of tile, which is best, or of stone, if more convenient. It makes little or no difference in regard to the desirableness of having the ground beneath well drained, whether the foundation walls are of stone or brick. But the ease with which different materials absorb water is an important consideration, and makes stone always preferable to brick if it can be procured. The foundation shown in figure 1 is supposed to be laid up of rough, irregular stones, in cement mortar,

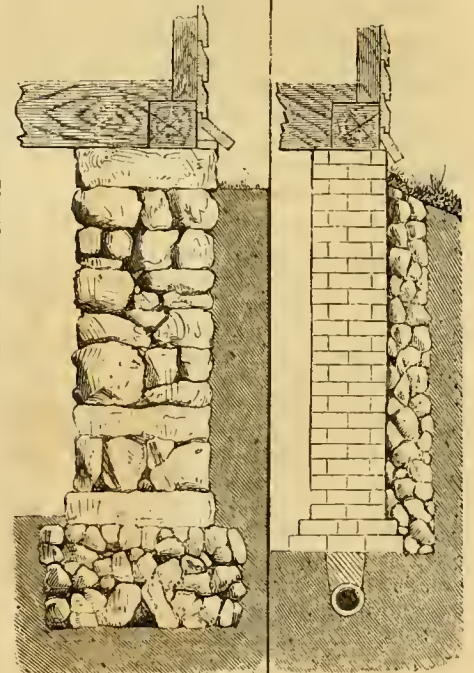


Fig. 1.

Fig. 2.

which is good, sharp mortar, made with thoroughly slaked lime, to which water lime is added to the extent of about one-sixth. This wall is laid upon a base of cobbles, thrown into a trench, the largest and flattest of the stones having been placed on edge, and inclined together like a roof, so as to form a channel for

water through the middle. When the trenches are dug, care must be taken that they all descend towards a convenient outlet; and from this point a covered drain, with which the foundation drains are connected, must lead off to lower ground. Instead of a channel in the stones, a tile drain may be laid six inches below the level of the trench. The tiles should be covered with earth, well packed with the back of a spade. If the trench is filled a foot deep with small stones, the weight of the wall and building will be distributed so evenly that there will be little or no danger of the tiles ever becoming misplaced. In case there is much water to be carried, this is decidedly a better plan than to have a channel in the stones, which in time is almost sure to be filled up.

It is not at all worth while to place a brick wall upon a stone drain, unless a bed for the bricks be laid in cement. This makes more work than is necessary, though the result is a very substantial foundation. Brick foundations are usually best laid over a tile drain about a foot lower than the bricks, as in figure 2, the tiles being of the smallest diameter procurable, the trench for the tiles narrow as possible, and the earth above them well packed. The brick wall may rest directly in mortar upon the earth, if it is of uniform hardness; but if it is not solid enough, old boards should be laid down to place the first course upon. The same cement mortar directed for stone foundations should be used for brick ones; and if the whole wall, inside and out, be floated over with cement, it will be more impervious to water, and the better for it. In case a wall is liable to receive the wash of higher land, or, if in case of hard rains, water stands near the house, lest it soak down, lie against the wall, and find its way through to the cellar, it is very well to establish a sort of indirect communication with the drain by filling in small stones by the side of the wall, as shown in the engraving, though, except upon very flat ground, or in a tenacious subsoil, it would be seldom necessary.

Such drainage as we have described will insure dry cellars, which may be grouted and cemented with care, and so made both rat and damp proof. Should springs occur in the cellar bottom, as is not unfrequently the case, separate covered drains must be made for them.

USE THE RAKE.—It is too much the custom to allow the ground to get weedy, and then make a job of hoeing out. It is better not to allow the weeds to get the start, and to effect this, no implement is more useful than a sharp steel rake. In small gardens, especially, whether of vegetables or flowers, the rake can be kept in such frequent use between the rows and among the plants, that very little weeding will be necessary. It is many times easier to kill a weed just as it is in the seed-leaf, than when it becomes a well-established plant. Stir the soil frequently with the rake, and the weeds will be taken at their most vulnerable time. A short exposure to the sun while in their early stage of growth will kill the hardiest of them.

More About the Sefton Swine.

"Our experience with fancy pigs" grows more favorable. The Seftons promise to be a success after all; for although the produce of the thoroughbred pair is scarce, (owing, we think, to too close in-breeding,) the crosses of the thoroughbred boar with sows of other

breeds are invariably fine. This fact becoming known among the neighbors, the boar is in demand at fair rates, and our own stock of pigs goes off readily, at high prices. Ten pigs, less than eight weeks old, have recently been sold for \$86, which is fully double the price that the same number from common stock would have brought, and with five promising sows to litter during the season, there is still a prospect that the original investment of \$60 for the pair of Seftons will prove to have been a good one. It is to be borne in mind that the young pigs which have thus far sold have all been *grades*, or crosses of the Sefton and common stock.

Farm Implements.

On the great estates of Europe and Great Britain, at the South, more under the old *régime*



Fig. 1.—KOOLOO PLOW.

than now, and on some of the great farms at the West, blacksmiths and other mechanics are as much a part of the regular force of farm laborers as plowmen. On our smaller farms the farmer himself must know enough of the various trades to be able to help himself, and keep the work going along, though tools break, and harness gives way, and nuts are lost, and all sorts of unforeseen accidents happen. A man who can sew a neat seam in a piece of harness, put on a horse's shoe, solder a seam in a leaky

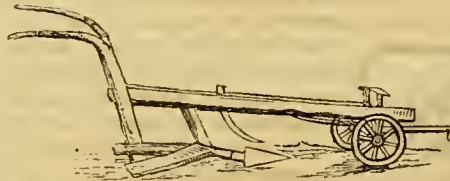


Fig. 2.—OLD EUROPEAN PLOW, STILL IN USE.

pail, get out the frame and put up a simple barn, mend his tools, wood his plows, and handle his axes, is not of necessity a "Jack at all trades, and good at none." He may be a first-rate farmer, and it is certain that a knowledge of all these may be had without making a man a worse cultivator. A very large farmer cannot afford time, except occasionally, and then more as a sort of recreation than for the profit of it, to do much tinkering, but the knowledge of how many a job ought to be done is well gained only with the ability to do it one's-self.

If this is true in regard to the actual manual operations which we have denominated "tinkering," it is ten times more important with regard to *principles*. If we all understood better

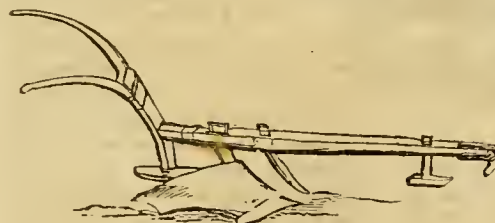


Fig. 3.—BADEN PLOW.

the principles upon which buildings, vehicles, and implements, are or ought to be constructed, it would keep mechanics up to their duty, and

we should have better houses, better tools, and better wagons. We learn what we know by hard experience, and even this knowledge is inaccurate. As boys in the Academy, we studied natural philosophy, and very likely neglected it for chemistry, (if not for Latin) thinking that chemistry would be of far more practical use.

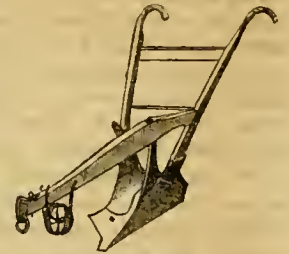


Fig. 4.—MODERN PLOW.

This is not the case. To the farmer chemical knowledge, compared with a knowledge of natural philosophy (physics), is of very little value.

John J. Thomas' new book is admirable for its presentation of natural laws, and for the clearness of the practical application of them, as exhibited in the forms of our best tools. In discussing the time-honored plow, Mr. T. gives a little historical sketch of the implement, with several interesting engravings, showing gradual advancement in the knowledge of principles, and their application. We borrow a few of the engravings of these rude implements. The Baden plow, fig. 3, reminds one strongly of the old wooden mould-board plows, some of which



Fig. 5.



Fig. 6.

may still be seen on old farms. The contrast with plows formed more philosophically, as most of our modern plows are, is very striking.

To illustrate the simple, clear way in which important principles are explained, we quote the substance of a paragraph in the chapter on plows:—A large part of the power of the team is expended in severing the furrow slice. The point or share should therefore be kept sharp, and form as acute an angle as practicable, as in fig. 5. Some plows, which otherwise work well, are hard to draw, because the share being made too thick or obtuse, raises the earth abruptly, as in fig. 6. Where stones occur, the cutting edge must form an acute angle with the land-side, like a sharp wedge (see fig. 7); a plow like this will crowd obstructions aside much



Fig. 7.



Fig. 8.

more easily than one like fig. 8. When, however, as in a breaking-up plow on the Western prairies, the great necessity is that the plow should cut roots, the sharpness of edge is more important than its wedge-like form.

Every part of the plow is discussed in like manner, and so with plow appendages, among which the *Weed Hook* is mentioned. As it may be of service to our readers this season in plowing under green crops or weeds, we give it. See fig. 9. "Sometimes it is bent in the form of a bow, with the lower point projecting forward, as in the upper figure; another form is like that in the lower figure, pointing backwards. This is less liable to be caught by obstructions." It bends forward the tall growth, and holds

it down until caught by the revolving sod. A heavy chain, attached to the beam near the standard, and to the end of the evener on the mould-board side, the bight dragging back as



Fig. 9.—WEED HOOKS.

far as possible, and yet escaping being caught by the furrow slice as it turns over, answers a similar purpose, but is not so easily managed.

Another implement, which may give a reasonable hint of value to some of our readers, is the *Hay Sweep*, figs. 10 and 11. This consists of an upright frame, fixed upon a double-headed rake, like that of a common revolving horse-rake. On each side of the frame is a

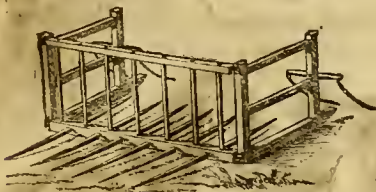


Fig. 10.—HAY SWEEP.

gate-like appendage, to which a horse is attached, one on each side. The horses are ridden by sensible lads, and the hay, unraked, or thrown into windrows, is gathered into the "sweep." The affair will hold four hundred or five hundred pounds of hay, and being able to slide easily over the ground, the horses quickly haul it to the barn or stack, if the distance be not too great, in which case it would not pay to



Fig. 11.—HAY SWEEP LOADED.

use it. There are many places where raking may be done by horse power, and where hay is stacked upon the ground, as on many of the salt marshes along the coast, and where hay wagons can not be used. Here we think these hay sweeps might be usefully employed.

The book is full of useful suggestions and practical hints, besides being the only work we know of in which the principles of natural philosophy are exhibited as applied upon the farm.

Turnips and Ruta-bagas.

There is hardly any soil upon which, with proper management, turnips may not be raised, and there is no more paying crop—considering the little labor required, the very short time it occupies the land, and its importance as an article of forage for all sorts of stock. We cultivate two different plants under the name of turnip, and each has an indefinite, we might almost say infinite, number of varieties. We distinguish them as common or English, or soft

turnips, and as Swedes, Ruta-bagas, Russian, French, etc. Those of one kind, *Brassica rapa*, are distinguished by roughish, light green leaves, while the varieties of the other, *Brassica napus*, have smooth, glossy leaves, usually of a greenish blue color. The culture required by the two kinds varies considerably, as the Swedes are longer in maturing, and to attain the full growth require a month or six weeks more time than common turnips. It is customary, therefore, to sow them about the middle of June, though they would probably do equally well sown earlier; while were we to sow common turnips too early, they would grow hollow and pithy, crack, fill with water, and, in all probability, rot before harvest. It usually does very well to sow Ruta-bagas quite early in July; in fact, to obtain the tenderest and best-flavored roots for the table, they are best sown some time in July, on most soils. Common turnips should be sown in this month, and there need not be any especial hurry about getting the seed in before the last of the month. It is well, therefore, to take time to get the land in good order, perhaps to plow it twice, and at any rate, to go over it well with cultivators, clod-crushers, or harrows, to kill weeds and mellow it well before the seed is sown. Common turnips are usually sown broadcast, but we are satisfied it pays abundantly to drill them, placing the rows fully 18 to 20 inches apart. If there is much organic or animal manure in the soil, the plants will make leaf at the expense of the roots; hence, except on very poor soils, barn-yard manure should seldom be employed. A single barrel of fine bone-dust or of a good superphosphate, applied with the seed in the drill, is by far the best application. Swedish turnips are sown in the same way, but they will bear a much stronger soil and more manure. In fact, excellent, well-flavored Ruta-bagas may be grown upon land which is so rich that common turnips would be woody, strong, and unfit for table use, or for profitable feeding.

In regard to varieties: The Yellow Purple-top Swede is, perhaps, best for general culture. Skirving's Purple-top having also yellow flesh, is superior for rather light soils. The Sweet German and White French are highly esteemed for the table. Among the almost endless varieties of the common turnip, after trying many kinds, we fall back upon the Cow-horn and Purple-top Strap-leaf, for general crop. The White Globe, Golden-ball, and several of the fancy varieties, are very good, but we prefer the old stand-bys, if pure seed can be obtained.

Sowing Corn for Green Fodder.

Corn for green fodder should be sown, not broadcast, but thickly, in rows three feet apart, so that it may be readily "tended" by horse power. At this width the cultivator will pass through the rows without danger, and if the seed is thick in the drills, (not less than twenty-five kernels to the foot,) it will, on rich land, form so bushy a growth as to nearly occupy the whole space. The sowings may be continued, at intervals, until nearly or quite the first of August. The rows being marked out, by chaining, or with the plow, the corn may be sown quite rapidly by hand, and covered with the feet, as recommended by Peter Henderson in his "Gardening for Profit," and then well rolled down. Or, which is much better, it may be put in with a wheat-drill by taking out all but the middle and the two end teeth, and stopping the discharge from the hopper except over

these. This will bring the rows at about the proper distance apart, and the quantity of seed may be easily regulated so as to give the requisite thickness in the drill. Corn sown in this way needs no additional covering beyond what a roller will give it. Should it not be needed for feeding in its green state, it may be bound in small bundles, and cured in long shocks, made around a rail supported by crotches or stakes. When cured, it forms a nutritious fodder.

The Treatment of Sick Animals.

The crying evil of the agriculture of this country is, that we have no good system of veterinary instruction. Except in the large cities, and, indeed, in most of those, it is impossible to find a well-educated veterinary surgeon. Throughout the whole length and breadth of the land, our poor dumb brutes, condemned to suffer from diseases generally brought about by our own carelessness or neglect, are obliged to bear the still greater suffering of the barbarous treatment of common farmers and quacks, who know almost nothing of the organization of their bodies. As a natural consequence, violent purgings, frightful blood-letting, blisters and firings, are applied without thought and without reason, entailing untold agony to the animal, and generally much loss to its owner. Of course, when an animal is sick, any farmer who is ignorant of what should be done ought to secure the best advice within his reach. But he should always retain so much control over the treatment as to avoid a resort to barbarous remedies, unless the unskilled practitioner can convince him that there is good reason for it; for, as a general rule, an animal left to the unguided curative processes of nature would come better out of its troubles than if subjected to the operation of brutal means for the restoration of its health. With animals, as with men, there is far too much medicine-giving, blistering, and bleeding; and probably more are killed or permanently injured by these practices than are cured by them. Of course, in some desperate cases, they are necessary, but they should always be resorted to with caution, and with much hesitation. In all minor diseases, which result almost invariably from bad air, bad food, filth, and neglect, the wisest treatment is the removal of the cause, and the restoration of those simple, natural conditions upon which the return, no less than the maintenance, of health is based. The purging ball may often be with advantage supplanted by a loosening diet, bleeding, almost invariably by such a diet and by pure air. Warm clothing and thorough grooming will usually do the work of the blister, and do it much better. In all cases of strains, bruises, and wounds, water is an almost sovereign remedy; and in nine-tenths of the cases in which it is thought necessary to send for the local cow doctor or horse doctor, the simple treatment above indicated will be found not only cheaper, but far better in its application and in its effects.

Management of Agricultural Societies.

Mr. J. H. Faile's address, delivered on the occasion of his retiring from the Presidency of the N. Y. State Agricultural Society, has been published by the Society. His views are plainly spoken, and no one can doubt their being earnest convictions. He strenuously opposes horse-racing, and all sorts of shows, as means



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A CALIFORNIA HORSE MARKET.—DRAWN FROM LIFE BY E. JUMP.—Engraved for the American Agriculturist.

of drawing a crowd, and would have our Agricultural Societies, who receive aid from the State, forced to keep the associations of the race-course entirely away from their grounds. The N. Y. State Society never has had trotting races, shows, games, or anything of the kind at their fairs, which have been so uniformly creditable and successful. So far as possible, it has encouraged things purely agricultural, and few others. Mr. F. would draw the lines still closer, especially in regard to those articles upon which the decision of the Society could not be taken as authoritative. Steam engines for general use, sewing machines, and musical instruments, fall within this catalogue, and while the makers and proprietors of them should be induced to exhibit them, he would have no premiums offered. All who are familiar with the working of our great agricultural fairs know that officers and clerks are worked almost to death for a day or two, before and after the opening, in taking entries, classifying them, making out the judges' books, and preparing for and receiving the stock and articles. The judges cannot act before the second or third day, and in many cases the show is not full until that time. Everybody tries to attend on the third

day, and on the contingencies of the weather and the ability of the railroads to carry the people depends the success of the show. All this Mr. Faile would remedy by simply requiring all entries to be made and the books to be closed some time previously. He proposes to print a complete catalogue of everything entered, giving as full details as possible, and have it for sale the first day, and have the judges do their work and be ready to declare the awards before the fair is opened. This would cause all the days to possess an equal interest. Thursday would no longer be the great day, to the discomfort of all and the disappointment of many who, on account of the crowd, see half the show. The business of four days would not be crowded into one, and the Society, the hotels, the railroads, would at the same time be greatly relieved, and much better patronized. We heartily second all Mr. Faile's efforts to secure greater efficiency in the management of the Agricultural Societies of the country for the objects for which they were established. These are not money-making, horse-racing, and the political advancement of their officers, but the diffusion among the people of useful knowledge upon matters pertaining to agriculture.

A California Horse Market.

The artist has, in the above picture, given us a scene which will be readily recognized by those who visited California in its early days. The Mexican ways of managing horses were followed for a long time after the Americans came into the country. With all their roughness and cruelty, the Mexicans had some good things about their horse management and equipment, and these were adopted by the Americans. The lasso was found to be useful, and the manner of throwing it was quickly learned, and the Mexican saddle, somewhat modified, is the perfection of saddles. The half-wild horses and mules are kept at night in a strong "corral," an enclosure formed by a strong stockade of timber. When an animal is desired for use or for sale, the herd is driven into the enclosure, and the designated one selected by the unerring aim of the "hombre," with the lasso. The writer has witnessed such a scene many times; the picturesque costumes, the strange looking horse gear, the skill displayed in the use of the lasso, the rushing of the affrighted herd, and the struggles of the captured animal, all combine to make it one of great interest.

Salvias or Sages as Ornamental Plants.

The scarlet Sage, *Salvia splendens*, is unrivalled for producing a mass of scarlet color. It is propagated from cuttings with the greatest ease, and it may be readily raised from seed,



THE BRACTED SAGE—(*Salvia involucrata*.)

though the plants will be later in coming into bloom. If the plants have room to develop, they will grow three or four feet high, and bear a profusion of intensely scarlet flowers until cut down by the frost. A more dwarf variety is Gordon's Sage (*S. splendens Gordonii*), which has equally brilliant flowers. It is difficult to find any flower of the exquisite shade of blue belonging to that of the Spreading Sage, *S. patens*; people who go into ecstasies over such things call it "heavenly." Unfortunately, the plant is rather coarse and weedy in its habit, and the flowers, though of rare beauty of color, drop very soon. Another, and a not generally known species, though an old one, is the Bracted Sage, *S. involucrata*. Its manner of flowering is very striking, and is shown in the engraving at about half the natural size. At the base of the flower buds are large, colored scales or bracts; these scales lap over one another, and completely envelop the buds, but drop away as the flowers open. As the flowering progresses from below upwards, the summit of the flowering stem is always terminated by a large, rose-colored button, composed of unexpanded buds, with their overlapping scales. The flowers themselves are rose-colored, and not large, but the effect of the whole when in flower is very pleasing. In France they have a variety of this called *Deschampsiana*, which has much larger flowers, and, judging from a recent figure in the *Revue Horticole*, must be a great improvement on the old form. All of these species are tender, and a stock must be kept in the green-

house over winter. The garden Sage, (*S. officinalis*), furnishes us an ornamental variety, called *Salvia tricolor*. It is in all respects like the common Sage, excepting in color; the older leaves are distinctly marked with white, while the younger ones have, in addition, a tinge of crimson. Messrs. Olm Brothers, of Springfield, Mass., sent us a fine specimen, which will allow us to test how the markings will endure during our hot summer weather. It is said to be equally hardy with the ordinary sage. Many of the plants with variegated foliage, which are so ornamental in Europe, fail to stand our climate.

Summer Propagation of Geraniums and Other Soft-wooded Plants.

In an article which appeared in our Horticultural Annual for 1868, Mr. Peter Henderson gives a method of propagating geraniums and similar plants, during the summer season. Last summer we tried it with such satisfactory results that we bring it to the notice of our flower-growing readers at this time. The majority of those who put out geraniums as bedding plants do not like to lose them when frosts come, and the plants are taken up, potted, and brought into the house. They generally manage to live through the winter, and in spring are sorry-looking, long-legged specimens, not fit to put out, but as they have been wintered with so much trouble, they go into the borders and—make a very bad show. A much better way is to follow Mr. Henderson's

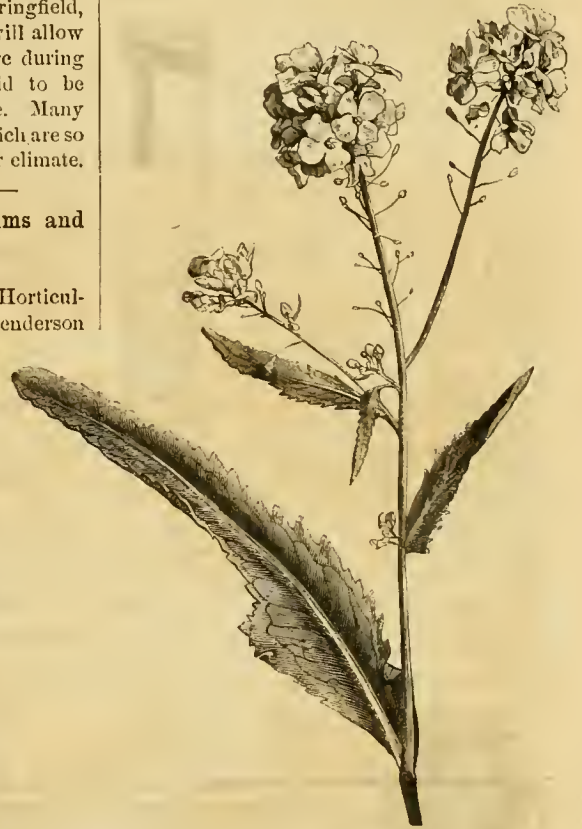
plan of propagating, referred to above. In July or August, when the plants have made a vigorous growth, cut the branches of which it is desired to make cuttings, so as to form a tongue, as in making a layer. The engraving shows how this is done at A, A. The wound will soon



MANNER OF TONGUEING PLANTS.

callus over, and in wet weather even roots will be emitted. When a good callus is formed, the cuttings can be detached altogether and planted in pots, or in a shady place in the open ground, where they will soon make fine, stocky plants,—just the thing for keeping over winter. We have enjoyed all winter some geraniums thus

treated, and when turned out this spring they were finer plants than any the florists furnish. When the cut is made as above shown, the buds below it push with great rapidity, and thus furnish material for a second supply of cuttings.



HORSERADISH FLOWER.—(REDUCED IN SIZE.)

The Horseradish Flower and Fruit.

The many letters which come, asking if Horseradish cannot be propagated by the seed, induces us to say that we should like to see a Horseradish seed. As it grows in old gardens, where the patch remains year by year, it flowers abundantly. Its blossoms are white, and of the general shape of those of the Mustard Family, to which it belongs. The engraving gives the appearance of the flowers. We were quite surprised to see these used in some large bouquets with very good effect. When the coarse stems and foliage are hidden, the flowers appear very much like those of Candytuft. Horseradish, like some other plants which propagate readily by other means, seldom produces seeds. Every bit of root left in the earth will produce a plant, and every gardener knows how difficult it is to eradicate an old Horseradish patch. In our improved methods of cultivation, the piece of root is put into the ground under circumstances which will induce a rapid growth and very little spreading. It is taken out in autumn, and thus the plant is not allowed to establish itself. In April, 1867, we gave one method of growing the plant. We have carefully watched and inquired for many years, and never yet saw or heard of a ripe pod upon a Horseradish plant, and the European botanists say that it very seldom perfects seed with them. Probably, if it were grown in a pot where it could not extend its roots, it might be induced to seed.

Button-hole Bouquets.

The custom is becoming popular of wearing a neat bouquet in the button-hole by gentlemen, and with ladies of wearing a similar one attached to the front part of the dress. We regard this as a pleasant fashion, and the ornamentation is vastly better than ostentatious displays of jewelry. The custom is not by any means confined to this side of the water, for we find that the most dignified of the English journals has within the year given several articles upon the proper making up of a button-hole bouquet. As these were intended for gardeners who had to furnish their employers with the choice products of the hot-house, they would not interest our readers. To our notion, a rose-bud with a green leaf that will not readily wilt, a sprig of Lily of the Valley with its leaf, or some such simple thing, that has an air of freshness about it and very little of arrangement, is in better taste than any elaborate affair can be. Ordinarily the little bouquet is pinned at the button-hole on the left side of the coat, worn there until it wilts, and that is the end of it. A friend of ours is noted among his many friends as always having a rose-bud at his button-hole. Noticing that at a time when rose-buds were scarce he made one do duty for more than



Fig. 1.

one day, we ascertained how it was done. Some one had brought him from France a little affair like that shown in figure 1. It is a small tube, closed at one end, with a wire to hook it to the button-hole. This being concealed beneath the lappet of the coat received the stems of the flowers, which were passed through the button-hole, and the tube being partly filled with water kept them fresh



Fig. 2.

all day long. Any apothecary or chemist, indeed any one handy in working with glass, could make such a contrivance or a substitute for it. Recently some similar bouquet holders have been imported from England, intended for ladies' use. They are tubes furnished with a pin to fasten like a common brooch or breast-pin. Figure 2 shows one of the plainest of these, in which the glass is hidden by a neat fern-leaf in bronze. Some of these imported designs are quite out of taste and ridiculous from the use of heavy gilded leaves and various colored heads, all of which must pale in beauty before the simplest natural flowers.

Strawberries in Pots.

Under the head of "A Revolution in Strawberry Culture," we read not long ago an account in a French journal of a discovery which was to revolutionize strawberry culture in France. It was to strike the runners in pots, plant them in July, and get a crop the next year, with various details as to distance of planting, manuring, etc. Some of our best growers have for a long time been practising what is es-

entially this method. It presents the great advantage that one can transplant without regard to the season or weather. Plants rooted in pots may be put out in July, or, if the ground be open, in December, and the plants never need know that they have been disturbed. It is well to prepare a good potting soil beforehand. Three parts of good loam and one of well-decomposed cow manure is the best. The pots may be about three inches across, though smaller ones will answer. When a runner shows signs of striking root and forming a plant, plunge one of these pots of earth in the soil of the bed, place the young plant on it, and hold it there by putting a clod or a small stone on it. Where very strong plants are desired, the runner may be stopped by pinching, but with most varieties this is not necessary. When the new plant has made enough roots to sustain itself, the connection with the parent plant may be severed, and it is then ready to be set out when it may be desired. The plant may grow in the pot until the roots reach its sides, and then the ball of earth be turned out and the plant placed in the bed without disturbing the roots. This plan is especially valuable for the amateur, and our nurserymen who ship plants find it advantageous to follow it. Plants started early in pots and set out as soon as they become well rooted will bear a fair crop the next spring. Those who force strawberries start the plants in the same manner, and when the roots reach the sides of the pots, shift them to others of a larger diameter, in which they complete their growth.

The Trees Do Not Bear.

Several letters are at hand stating that the writers have trees of such and such varieties, planted so and so long, but which do not bear, and asking what is the matter. A tree goes on making a growth of wood for a greater or less number of years, according to the variety. At length the buds, which might have prolonged into branches, take on a new development, and bear flowers and fruit. In the natural course of things, the time when this change will take place is governed mainly by the character of the soil. In a very fertile soil, the tree will make wood, in preference to forming fruit, for a longer period than it will in a poorer one. In orchards, the tendency to form wood is checked when the trees have attained a sufficient size, by seeding down to grass. Whatever checks the growth of the tree, and threatens its life, has a tendency to throw it into fruiting. The time required for different varieties to come into bearing varies greatly, and this is a point on which our fruit books are very deficient in information. Some varieties of pears, for instance, will bear in two or three years from the bud, while with others one must wait for eight or ten years; and it is so with apples. With varieties which are naturally late in coming into bearing, our advice is to wait; but where a tree, which should bear, does not give fruit when at a reasonable age, we should root prune. The best time to do this is in the spring. Dig a trench around the tree, at a distance of one foot from it, for each inch of the diameter of the trunk, *i. e.*, a tree three inches through will have a trench forming a circle six feet in diameter. Dig down, and with a very sharp spade cut off every root that extends beyond the trench. There are modes of summer pruning to induce fruitfulness, but these can be applied to only a few trees, while root-pruning can be readily applied on the large scale.

About Chrysanthemums.

After all the glories of the garden, the Chrysanthemum crowns the year. All through the summer it has a weedy and unattractive look, and most people let it have its own way. It is only storing up strength to withstand the frosts, and late in the season it will blaze with flowers. A neglected Chrysanthemum is good, but one properly cared for is a treasure. Suppose we start with one with a single stem, such as the florists send out. When it is fairly established and growing well, pinch off the top; this will cause several branches to start, and when they seem vigorous, pinch them again, and so keep on until the middle of August, or the first of September. Then if the branches are crowded, thin them out, and stop the suckers which will start up from below, as well as those branches which start too late to form flower buds. By a little care, supposing that the plants have not been put too near together, a handsome head may be formed. We have noticed that later in the season a hairy caterpillar is very destructive to the Chrysanthemum foliage, but it is easily shaken off and crushed. A dark colored aphid sometimes infests it; we have never had it sufficiently abundant to be beyond the control of thumb and finger, but if it should prove annoying, we should try the effect of tobacco water.

Notes from "The Pines."—No. 2.

If we had a national school of horticulture, the best thing that it could do would be to buy this place for the sake of the useful examples and warnings it presents. I wish you could see the currant bushes, and note the proportion between the timber and the fruit. Enormous clumps of old wood, which looked as if they might bear pecks each, show a promise of a quart. The old-fashioned notion of "the more branches the more fruit" finds full exemplification here. The only decent thing on the place is the strawberry patch. Unfortunately, it is of Russell's Prolific, a capital berry to have for home use, but much too soft for marketing. For a wonder, the plants have been cultivated in hills, and this spring made a most satisfactory show. The man was told to mulch the bed with salt hay; he comes from the land of dictionaries, New England; so, instead of asking an explanation, he consulted one of the W's, and found that to mulch was "to cover with straw." This happened before we took possession, and when we came, some weeks after, we found the bed actually covered up, and the poor strawberry plants in a fair way of being smothered. A dictionary is "a good thing to have in the country," as friend Sparrowgrass would say.

The author of "Walks and Talks" has a Doctor and a Deacon to make up the dialogue. I have two Doctors! There is the Doctor who lives here at home, and 't'other Doctor, who lives the other side of the river. I shall call one Doctor "the Doctor," and the other one may as well be distinguished as Dr. K. We, the Doctor and I, called the other day on Dr. K, who has just been laying out a new place. He had two pieces of lawn which were seeded this spring; one was nicely green, and the other showed no sign of grass. He asked me to explain. "You had different seed?" "No." "You used guano on one and not on the other?" "No." "One was rolled or beaten?" "Yes." A more marked instance of the utility of compacting the soil around seeds could not be pre-

sented. This reminds me to commend at this season, when many things are to be transplanted, what Peter Henderson calls "firming." In setting out cabbages and other plants, go over the row and press the soil down firmly about the root with the foot. I very rarely lose a plant, if it has any life in it, if I set it myself.

Dr. K. showed a choice lot of evergreens, and I remonstrated with him for putting such valuable things so close together. He explained that his object was to "plant out" his privy. It is very singular that this appendage to a house should, by some, be made conspicuous, even to the extent of having a roof of variously-colored tiles. How much better it is to hide this edifice, as Dr. K. has done, by a closely planted group of evergreens, than to make it striking by architectural embellishments.

A wealthy man near here has a kitchen garden which is pleasant to look at. He has from two to six men constantly at work upon about two acres. Not a weed is to be seen, and everything looks in holiday array. This will do for those who have the money to expend, and it is pleasing to see what can be done by one who is able. In contrast with this is another neighbor, who is reputed to be worth more than a million, who is trying to run a farm of sixty acres by the labor of one man! The work of that one man makes a fine show, taken as one man's work, but it is not just treatment of the land, or of this one man. This same proprietor has recently been trying to reclaim a swamp, so as to extend his area of available land. How much better would it have been to have improved the acres already under the plow! But this is farming, and not gardening.

Rustic Pottery.—(See next Page.)

Frequent illustrations have been given in these columns of "rustic" work made of wood, bark, and the like. Messrs. B. K. Bliss & Son, the well-known seedsmen, have recently imported some samples of English rustic work in pottery, which seem to us particularly well adapted to the uses for which they are designed. Figure 1 is an arch for an aquarium, lighter and more pleasing in appearance than any that can be built up of stone in the usual way. Figure 2 is a hanging bracket which has cavities to contain such plants as require but little soil. Figure 3 is a standing "jardinet," which may be placed on a bracket or shelf, and which has several "pockets" to contain soil for plants. Some of the ferns, *Isolepis gracilis*, *Tradescantia zebra*, *Moneywort*, the Creeping Saxifrage (*Saxifraga sarmantosa*) and many similar things, would do admirably in such a receptacle. As the material, the same as that of which flower-pots are made, is very absorbent, they would, when once well soaked, retain water for a long time. We give but three, which will show the rustic beauty of about a dozen of these designs. Those who live near potteries can get the clay, fashion them themselves, and have them baked; and it would not be a bad idea if some of our potteries would take the hint and make them, as our people are ready enough to buy tasteful things if they can obtain them at a moderate price. From our knowledge of other work done in hydraulic cement mortar we have no doubt that similar things can be made in that material, and these need not be baked. As soon as the cement hardens, if it is of a good kind, it resists the action of water. Articles of this kind, whether made of baked clay or cement,

will be destroyed if exposed to the action of frost while at all wet.

Landscape Gardening.

[In the laying out of grounds, only general instructions can be given; unless in perfectly level land, the requirements of each acre will differ from those of the next, and while the same principles are applicable to all, the details will differ in each case. We gave, in February last, a plan by Mr. Eugene A. Baumann, Landscape Gardener, of Rahway, N. J., for laying out a village lot, and we now present a design by the same gentleman for a much larger area. This plan is valuable for the suggestions it gives as to the general arrangement, and these are applicable to smaller as well as larger places. The following is his description.—Eds.]

This is an ideal plan of a suburban place of about eight acres, planned more with respect to pleasure grounds than to vegetable garden, orchard, etc. It will be noticed that almost all the parts that require the frequent presence of the gardener or his assistant, as well as the stable, coach-house, cow and hen-yard, gate lodge, drying ground, and turns, have been connected in the north-eastern end of the place, thus relieving the pleasure ground of all communications which do not belong to it, and making it the more private. The pleasure ground lying inside the lot is divided from the vegetable garden by a dense belt of trees, which may, in preference, consist of evergreens of medium height, besides a hedge running in the rear of the same belt, from the gate lodge up to the entrance at N'. On the north-east there is a space suggested for an orchard, and on the south-east another space for a pasture ground, which, if desired, may be used for an additional vegetable ground for the coarser crops. These two fields are cut off from the pleasure ground by a wire fence, established all along X, X, X, which is built in a way to show as little as possible. At A is the dwelling, fronting south-east and south-west, and with the carriage approach on the north-west side. Except the rear part, or kitchen, the entire building is surrounded by piazzas; but as the building is already of large size, it is intended to give it a wider base by establishing a terrace, A', on the two main fronts. Without altering the shape of the even ground on which the plan is supposed to lie, the earth, which may be on hand from the foundations and cellars, can be employed to grade this terrace, instead of following the very common and objectionable plan of employing that soil for a sort of sloping or terracing, which has no appearance of taste. Such a terrace, if well arranged and well drained, will always be a very convenient place for walks in moist weather, and as no carriage reaches it, it can be easily kept in good order, and remain private. In the summer season the terrace may be the place to exhibit fine specimens of show plants, cultivated in nicely painted boxes or vases, and even some statuary. A brick wall of the required height, but not overreaching the top of the terrace, covered with a stone coping, and then surmounted either with a fine cast-iron railing of two feet six inches to three feet, but not more, or a wire railing (wire netting), or even in case of a very large, heavy stone building, a well-designed stone balustrade, will always produce a fine effect. A small border may be left outside of the railing for all sorts of flowering climbers, which will help to embellish the terminus of this terrace.

At B it is suggested to locate a conservatory for a collection of fine specimens of plants, which may assist in decorating the terrace around the house in summer, and halls and stair-case, etc., in the house during winter entertainments.

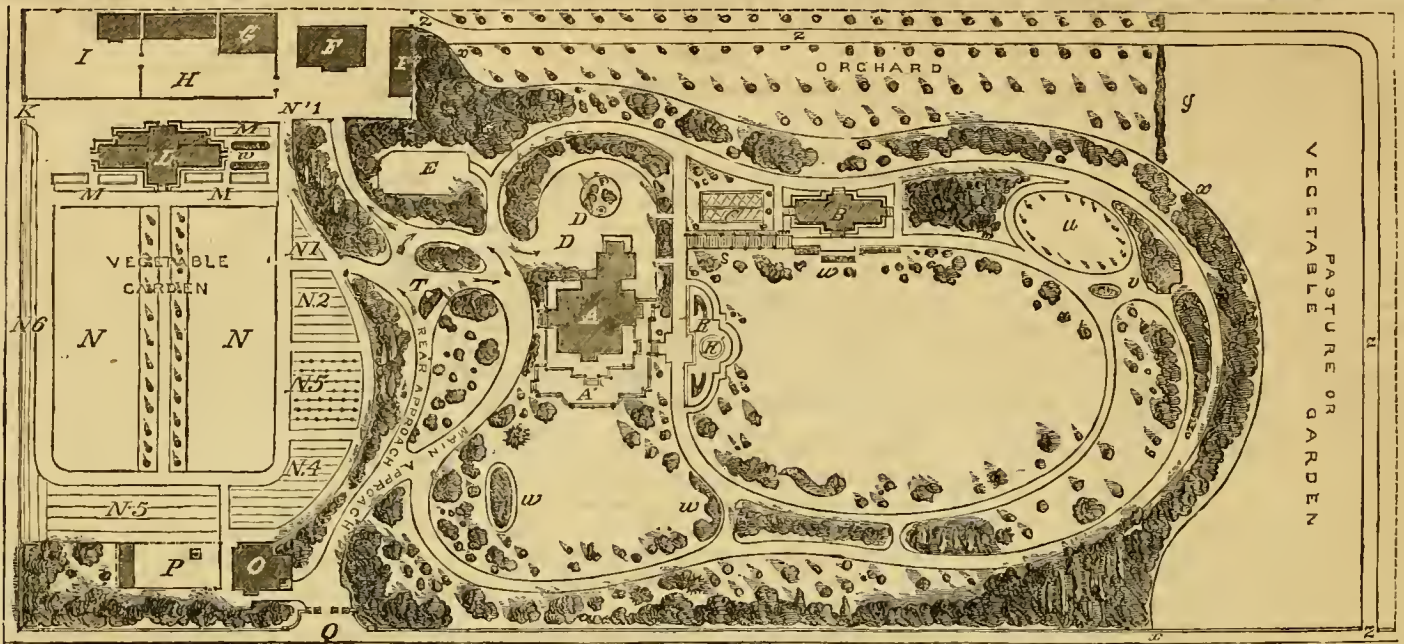
At C is a shed, hidden by an arbor, for sheltering under trellis-work during summer the plants of the conservatory which will require open air. D' is a graveled yard, giving access to the kitchen for traders, coal, wood, etc., etc., without employing the main approach or the front steps. D is intended for the well. E is a drying ground, entirely hidden by evergreens, and easily accessible from the kitchen or laundry. F is the coach-house, with a yard in front sufficient for turning the vehicles.

F' is a building (sheds) for a tool-house, and for wood, seeds, etc., mostly used by the gardener. G and H are cow-stable, barn, and cow-sheds, with a yard enclosed by a fence, subdividing it from the coach-yard and vegetable garden, as is the hen-yard, shown at I. At K there is a rear entrance, intended mostly for the use of the vegetable garden, and to approach the aforementioned farm buildings. L shows the green-house, grapery, and propagating house, surrounded by the hot-beds, represented at M. N is a vegetable garden, with two main fields laid out lengthwise, so as to make them accessible (if desired) to small plows. Two borders along a central walk are intended for dwarf pear and apple trees, currants, gooseberries, etc. N, 1, 2, 3, 4, 5, and 6, are as many irregular pieces, intended for the cultivation of such articles as do not require yearly changes—for instance, strawberries, asparagus, rhubarb, horse-radish, raspberries, blackberries, etc. The border at N, 6, may be advantageously employed for grape vines, espaliers of peaches, apricots, etc. O and P represent a gate lodge, with yard, and outbuilding, and well. Q, the main gate, or approach to the house. R and R' (east of house), represent a small flower garden, with basin, and jet of water, which is meant to be supplied from the roof of the dwelling. S represents a grape arbor, leading from the house to the conservatory; the structure is intended to be open on the lawn side, and closed in the rear. It is made in the style of an Italian pergola, supporting in the rear grape vines to be trained on the top, whilst the low railing and columns, subdividing the openings in front (on the lawn side), may be employed for a display of flowering climbers.

Such grape arbors, if of a good, chaste design, will always be a fine ornament in a pleasure ground, and, during the hot summer days, an agreeable retreat. There ought to be no stone or wooden floor in it, nor ought the floor to be simply graveled. Instead, I should suggest to have the floor made of asphaltum and sand mixed, so as to make walking soft and quiet.

Suggesting arbors of a good style in new places frequently encounters opposition. Many persons suppose that something tasteful can not be made instead of the queer shaped arbors seen in most places, built up roughly by the first available carpenter or builder. It costs but little more to build a durable and tasteful arbor, which will be an ornament to a place, than to spoil it by an ugly structure.

At T, in the turn, there is suggested a small basin, located just on the back road of the turn, thus affording a facility for watering horses. At U, an oval playground, surrounded by flowering shrubs, wide enough for the croquet game. At V, a rustic, open summer-house, connected with a group of evergreens, as a resting-place for the players. At W, single



PUBLIC THOROUGHFARE.

PLAN OF A SUBURBAN PLACE OF EIGHT ACRES. BY E. A. BAUMANN, RAHWAY, N. J.

scattered flower-beds, or beds for roses, ornamental foliaged plants, and bedding plants in general, with the exception of *hardy perennials*, which I should suggest to employ as much as possible in the foregrounds of groups of shrubs, where they will show better in spring, and where their foliage (which often requires cutting back after the flowers are over, if employed in groups in connection with annual or bedding plants,) will be constantly a good link connecting the foliage of the shrubbery with the lawn.

At Y, there is a short hedge to subdivide the orchard from the pasture ground, provided the last field be employed for this purpose.

As a convenient communication between stable, orchard, and pasture lot, there has been suggested a lane, Z Z, which, instead of being gravelled, may just as well be sodded.

This system of sodded walks and lanes, through worked fields, is of very great advantage, as it avoids edgings, and may be kept constantly in good order by the mowing machine and the roller. They ought generally to be some three to four inches above the land, thus making the trimming easier than by having them below the surface of the cultivated park.

In laying out a plan like this, I should even



Fig. 1.—ARCH FOR AN AQUARIUM.

suggest that the main, or cart, road in the vegetable garden be made in this way. Where I have

seen such walks employed, or where I have laid them down, they give much satisfaction; the

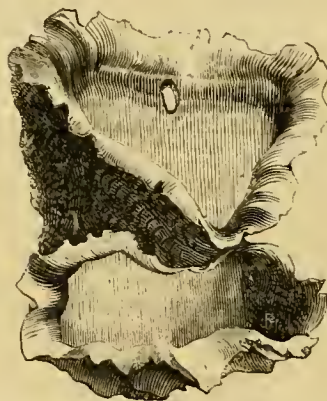


Fig. 2.—HANGING BRACKET.

weather must be very damp for a long while before a light cart will cut in; and then any other walk or drive will present the same difficulty, unless it is very well stoned and gravelled, which costs more than five times the making of a sodded one, besides the keeping in order, renewing the gravel, and the indispensable edging.

In regard to the planting, the space of this article will hardly allow complete specification, though this part of the operation is rather the more important. This is more the artistic part of the Landscape Gardener; indications of a general arrangement may be given, but it is usually ruled by the trees and shrubs on hand, or that may or may not succeed in this or that soil.

As a general hint, it may be indicated that, for instance, the north-western part and the northern side may be stocked mainly with the various leading evergreen trees, thus protecting the place from the cold winds in winter, and hiding for the whole year all such features as ought not to be seen from the dwelling.

Single deciduous trees and shrubs may then, as contrasts, be employed in smaller numbers between the evergreens, or in front of them, where even tender sorts may find some shelter in winter. The employment of a majority of evergreens in one part of the lot does not exclude them from the other parts; but then the

deciduous trees and shrubs ought to form a majority, and the evergreens only be interspersed, to give a variety, and to afford some green foliage over the place during the whole year.

Single dense groups even may be introduced in such a manner as to present a long front towards the house, having the sun in their rear. Such groups, once grown up, will afford shady locations in which *Rhododendrons*, *Azaleas*, *Andromedas*, *Ledums*, ferns, and evergreen climbers, will succeed better than anywhere else.

In giving this ideal of a place, we represented a piece of flat ground instead of a hilly one. There are everywhere flat grounds to be met, and the distribution given here may answer somewhere or other, in the whole, or in part.

A design for an uneven, hilly, or rolling land may be a good drawing, and show the best of distributions, but it will never be of much help to a reader of this, as two similar pieces of uneven ground will hardly be found. Such grounds



Fig. 3.—RUSTIC JARDINET.

require a plan for their own shape, just as each hunchback requires a coat made for his own use.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

The Table—Order and Ornament.

It was expected that the subjects comprised under the above heading would be disposed of in a few articles. From the interest they have excited, as indicated by our correspondence, we do not see but we shall be obliged to continue them indefinitely. We only aim to give such suggestions as are in accordance with good usage among the sensible, plain-living, and well-bred people in the portion of the country in which we live. That customs differ in other parts of our wide country, we are well aware, and we have endeavored to present only those points which will commend themselves to sensible people everywhere. In one of these articles it was suggested that it was better to take soup from the side of the spoon than from the point, and we were much amused at receiving a letter from a gentleman asking if there was any enactment of Congress to this effect. Certainly not, nor is there an act of Congress that one should take his hat off at table, black his boots, comb his hair, or do many other things that even the writer of the letter probably scrupulously observes. There is no written law of deportment. We think none the less of a man, as a man, who eats with his knife at table, yet it would vastly increase our comfort if he would use his fork. The matter of table etiquette is the result of the experience of the "best people" for many years. By "best people," we do not mean the rich or the fashionable, but those whom every one looks to in his neighborhood for an example in those very things, for which there is no law but that of custom. Here is a letter from a lady in Grimes Co., Texas, which shows how little is known of what to some are matters of every-day usage. The writer begs us "not to laugh at her,"—which we certainly shall not do, but commend her good sense in asking about that which she wishes to know, and for not being ashamed to sign her full name. This letter is just of the kind we like, and we wish that housekeepers in all parts of the country would make their wants known as unreservedly. She says:—"To the Author of 'The Table—Order and Ornament.'—Please accept a young and inexperienced housekeeper's thanks for the articles already published in the *Agriculturist*, and I beg you to please continue them. We poor mortals out here in Texas have much to learn, and any information in regard to the table is thankfully received. I wish to ask you one question, and not only I, for others have asked me to write and ask you the same. When meat comes on the table, as, for instance, pigeons or spare-ribs, with nearly all the meat cut off, or any meat with bones, and it is cooked until it is impossible to cut it off with the knife, shall we take the bones in our fingers? or shall we go without any meat? or what shall we do? I presume it is not proper to take it in our fingers, and if you cannot help me out by giving us some magical method of separating meat from bone, we shall have to give up many dishes that I am extremely fond of. Don't tell me not to cook it so much. I don't, but others do, and will continue to, in spite of all you or I may say. (1.) Do tell me about napkins. Is it proper to wipe the mouth on them? And when through with the meal ought they to be folded, when there are no rings, and laid on the table, or not? Can they be used more than once, etc.? (2.) In the diagram of the table there are no cups, etc. Here everybody has strong coffee three times a day. Tell us how to arrange them on the table. (3.) Above all things, (I ask as a lady did in the *Agriculturist*) tell us 'What goes with which, and which with what.' (4.) Is it not proper to have pickles on the table whenever there is meat, if it is breakfast, dinner, or supper? (5.) What meats does catsup go best with? (6.)"—We can now answer our correspondent but briefly, but may have something more to say hereafter upon the matters she asks about. (1.) It is not improper to take the bones of birds or meats in the fingers,

when necessity requires. Had we space we could give ample "authority," but common sense will sustain us in saying, that if the meat can only be removed by taking the bones in the fingers, use the fingers. (2.) Napkins are intended for wiping the mouth and fingers. The members of the family, having rings to identify their own, use them as long as the lady of the house may decide proper. A guest should fold the napkin and place it by the side of the plate. It is not improper to give a guest at another meal, a napkin he has once used, but ladies who pride themselves on their table linen like to make a display of a clean one. This is a matter governed entirely by circumstances. (3.) This custom of the use of coffee in Texas, and the Southwest generally, we are familiar with, and may have something to say about it at another time. Within our observation here, cold water is the general dinner drink, though some persons use light wines. (4.) This question is very comprehensive, but we have not forgotten it, and shall reach the subject in due time. (5.) The use of pickles we can give no rule for. They are condiments, not food, and we should use them whenever the tastes of those at the table require them. For ourselves we have them only at dinner. (6.) Here is another case in which there is no established usage. Catsup is a condiment, and individual taste alone is to be consulted. We know a person who sprinkles everything he eats (except bread) with black pepper, and those again who use catsup upon all kinds of meat, fowl, etc. The most that can be said is that such tastes are not very discriminating. To our notion, catsup is best with cold meats, but we see no reason why one should not use it whenever it is fancied. Please bear in mind that we do not assume to dictate any law in these matters, but to give hints, which, if they commend themselves, may be acted upon.

Soap Making.—Mrs. L. C. Merriam, Lewis Co., N. Y., sends the following, which she assures us makes most excellent soap. "For one barrel of soap, pour into a strong barrel 4 patent pailsful of lye that will bear up an egg; add 30 lbs. of melted grease (previously tried and strained), and mix them well together. Let stand a few hours and then stir thoroughly. As soon as the soap begins to thicken, add weak lye, one or two pailsful at a time, until the barrel is full. Be sure to stir the soap thoroughly each time the lye is added, and afterward stir once or twice daily for three days. For those who live in cities, the following recipe for potash soap is invaluable. Put in a strong barrel 25 lbs. of potash, broken into small pieces. Pour over it 4½ pailsful of boiling water. Stir well, let stand 12 hours or more, and then dip off carefully 3½ pails of the clear lye into another barrel. Next heat 30 lbs. of strained grease, boiling hot, and pour into the lye. Stir well, and let stand until it begins to thicken, which may be in 3 or 4 days; then add 2 pailsful of weak lye daily until the barrel is full, stirring well each time. The weak lye is made by adding more water to the potash which remained in the barrel."

A Busy Day's Work with Recipes.

BY MRS. R. B.

In many families it is not convenient to hire help, and therefore it is necessary for the wife to arrange her work wisely in order to have her afternoons for sewing or calls. In the first place it is very essential to have early rising, and regularity of meals; an half hour lost in the morning cannot be regained by haste during the rest of the day. Have breakfast at six, or half-past; dinner at twelve; and tea at six in the evening. This will enable the husband to breakfast with his family before going to his farm, store, or shop, whichever it may be, and will give him more cheerful thoughts during the day than if he partook of a few mouthfuls of cold meat, with a cold cup of coffee, alone; or if living in a village, he went to a lunch-room on his way to his place of business. Now, for instance, take Saturday, baking day, and the day of preparation for the Sabbath. Having prepared my sponge

for bread overnight, I mix my bread, and place it in the tins where it will be kept moderately warm; and then, perhaps, my little two-year-old boy says: "Please, mamma, take Freddy," which I do as soon as I can remove the dough from my hands. This I can do much more quickly by using a small nail-brush which I keep in the sink for that purpose; and I have none of the trouble, of which I hear many ladies complain, that their hands are soiled with dough when unexpectedly called to the parlor. Having pacified the little fellow, and set him to play with his blocks, with which he will amuse himself for a long time, I then put in order my bedrooms. In the meantime Willie, who is older than Freddy, has gone out to play, and Clara, who is still older, has washed up the breakfast dishes. I now direct her to prepare the vegetables for dinner, which, being done, she is ready to interest Freddy, if necessary. I then prepare my cake for the oven, having my fire in good order. This is my recipe for gingersnaps. Two cups of molasses, one of lard, one of water, one teaspoonful of ginger, one teaspoonful of saleratus, and a little salt; knead well, roll thin, cut out with a cake-cutter or teacup, and bake in a quick oven. I mix a loaf of soft cake, called "Tip-top Cake," in this manner: Beat well together two eggs, one and a half cups of sugar, a little salt, a little nutmeg, one tablespoonful of butter, one-half teaspoonful of saleratus dissolved in one cup of milk, one teaspoonful of cream of tartar, mixed with two and a half cups of flour. It should be baked as soon as it is mixed. This is my recipe for lemon pies, which I bake between two crusts: Take two common-sized lemons, squeeze the juice, and chop the rinds very fine, with one-half pound of raisins, or a large teacupful of dried apples soaked overnight, three tablespoonfuls of flour, three teacupfuls of molasses, and four of water. If my bread has become sufficiently light for baking, I bake it before I do my pies; for they require a slow oven, or they are apt to stew out. As soon as my pastry is all baked I renew my fire and bake a nice piece of meat, either spare-rib, beef, or veal, having had plenty of time to prepare it for the oven, as it is seldom that a stove oven will bake as fast as one can prepare the pastry. This gives you a good piece of cold meat for Sunday's dinner; and by cooking a few warm vegetables, and making a cup of tea, you can quickly and easily arrange a meal for the day of rest, which has been very wisely set apart from labor for our good. But now to my household work again, for the hour for dinner draws near, and we must put in order the kitchen and dining-room. We must also take a look in the glass and see if we are presentable before going to the dinner table; if not, we must give our hair a brush and make ourselves clean and tidy, not only as an example to the children, but because all husbands like to see their wives neatly dressed. The children will soon be asking for dinner, and husband will be glad to have it all ready for him when he comes in. Dinner over, little remains to be done but to sit down to sewing. This may be done by half-past two or three o'clock. How much better is this than being on your feet all the day long, getting so tired that you are not able to attend church on the next day!

Thus it can be seen that by the management of work on a good plan, and, of course, by practice, it is very easy to have your afternoons to yourself, and, at the same time, neglect no part of your work. Thus may it be through every day of the week, except in a few very large families, in which, on washing days, you may be busy until later.

Household Talks.

BY AUNT HATTIE.

Men generally think that, as compared with women, they have much the harder time of it. I know they think so. When they come home from the field on the noon of a hot summer's day, heated, tired, hungry, and cross, and find the dinner table set in the cool dining-room, the kitchen heat carefully excluded, and the breeze from under the

shady cherry tree gently wafting in through the half-closed window blind, as they stretch themselves on the lounge, they think, "Well now, this is pleasant! How cool it is here! How clean everything looks, and how quiet and neat the children are! I wish I had nothing to do but stay at home and take it easy. Don't the women have a jolly time of it, though!" Now, my dear sir, don't go to napping with that unjust thought in your mind, but think a little further. Who was it hurried with the morning's baking that she might have time to set that pleasant table? Who was it made that long row of pies and cakes you saw through the half-open pantry door? Who made those doughnuts of which you are so fond? Who skimmed the milk, and made the butter for market and table? Who put up those eggs for winter use? And who washed the children, and combed their hair, and buttoned their shoes, and made the beds, and swept the stairs and hall, the sitting-room and stoops, and bottled the pie-plant and made the ice-water ready, and did up your shirts and collars because Peggy can't do them well enough for you? And who sat down to talk for over half an hour with Neighbor Anderson's wife, who came in because you were so pressing in your invitation last Sunday, when you might have known she would come when your wife was full of business, and could no more spare the time to sit down than you could let your best worker go fishing when the hay was ready to curry, and your weather-wise head told you it was going to rain before night? Who was it, think you, closed the blinds, drove out the flies, and kept the kitchen door carefully shut all the morning, so that the rooms should be cool and pleasant for this very noon of yours? And who promised the children something good after dinner if they would keep their aprons clean, and be quiet while papa was in the house? Who? Who but the thoughtful little woman whom you call wife, who, you think, has such an easy time of it, and who is even now dishing up the dinner so briskly. "But," you say, "there is Peggy; what has she done?" Done? What can she do? A new girl, two years from Tipperary, three weeks from the bush in Canada, who never baked a loaf of bread in her life, who doesn't know how to set a table, and who knows nothing about making butter, except to turn the crank or lift the churn dasher. But she is capital with the baby, and has done a good deal this morning. She has peeled the potatoes, prepared the roasting-piece, and put it in the oven, has done up the dishes and kettles used in preparing breakfast, has washed off the stove, put wood on the fire, and helped wash and polish the silver, has skinned the pie-plant, held the baby, carried water, scalded the milk-pans, washed the nursery windows, swept the walks before breakfast, cleaned the oil-cloth in the hall, dusted, carried out slops, scrubbed the kitchen floor, and attended to the children. Then she has ironed the children's clothes, the table-cloths, and some of the sheets; she has fed the chickens with breakfast table scraps, given them water, and brought in the eggs; and, lastly, tried to blow the horn to call you to dinner. And, bless you, after dinner, what will that wife of yours do? Well, if she doesn't have to take the baby, she will help clear away the table, making the best of everything, placing the cold meat on a clean dish, and putting away any bread or pie. Then, while Peggy is washing the dishes, she will brush up the dining-room, and wipe the fingers and lips of the children, and give them the something good she promised. Then she will straighten up generally around the kitchen, finish up the ironing that Peggy left, make a johnny cake, hull strawberries, and make a custard for tea. Then, after her dress is changed for the afternoon, she will cut out, make up, and finish a dress or an apron for one of the children, receive calls, and do nobody knows what, from rise up until bedtime. But perhaps you will say, "Nonsense! my wife doesn't work like that." My dear sir, let me help you a little. If you come home at noon and find the dinner ready, the parlor cool and pleasant, bread baked, butter churned, pies to eat, doughnuts to crack, and

cookies to munch, if the children are clean and well behaved, you may depend upon it, a woman has been at the bottom of it all, and it is not Peggy, and if it is not Peggy, why, it must be I.

PAPERING.—As many persons living in the country are obliged to do their own papering, a hint or two will be timely. Walls that have been white-washed should be wet with alum water before applying the paper. One edge of the paper should be removed with the shears before the lengths are cut. Remember to match the pattern before cutting the lengths. The paste should always be made the day before, as it should be perfectly cold when applied to the paper. A very good paste may be made as follows: Put into a pot or kettle about a gallon of water; it will take nearly that quantity for a room requiring from twelve to fourteen rolls. Mix about a pint of flour with a very little water, just like dough at first, making thinner afterwards; this avoids lumps. When the water boils, pour in the thin batter. Stir to prevent burning, and, as soon as it boils, turn into a milk-pan or convenient vessel, and let it stand until next day. If it should be lumpy you must strain it.

RASPBERRY BREAD.—It has sometimes happened that having no sauce for tea, and only a very few berries, I have been compelled to invent something to supply the deficiency. A very pretty and delicious dish I have made as follows: Cut four or five slices of the best white bread, trim them, and place flat on a dish. Pour over each a small quantity of milk or cream, and sweeten well. Then mix to a jam a few red or black raspberries, and spread a quantity on each slice. Do not place them one over the other, but allow them to remain as before the milk was added. Fix it just as you go to table. Strawberries may be used, but I prefer raspberries. Of course this would be a superfluous dish if the fruit could be obtained in any abundance.

BAKED CUSTARD.—Custard cups are of about the size of small teacups, and may be obtained at any crockery store. They should be thick and heavy. If you have no custard cups, you may, if you wish to try this recipe, use coffee cups, as the heat required to bake the custard will not be sufficient to injure the ware in the least. Take a pint of milk, and about a tablespoonful of sugar. Beat thoroughly two large or three small eggs, and mix into the milk. Pour into the cups and bake in a very moderate oven. To please the children I add a few well-washed currants. If the oven is very hot, put a quart of water in a dripping pan, and let the cups stand in it, leaving the door open until done.

Musk Mats.—A correspondent says: "To make an excellent door mat, take an inch plank of the size desired, and bore $\frac{3}{4}$ -inch holes through it with their centers 2 inches apart; into these draw dampened corn husks, and trim off about 2 inches long on each side. This mat is good either side up. Anybody can easily make one, and every one can keep his boots clean, much to the gratification of good housekeepers."

KEEPING HAMS.—My hams are thoroughly dried, and I have wrapped them in paper bags and hung them in the garret. They are not smoked, and look deliciously clean and sweet, as they have been kept in paper since coming from the salt. Mary watched me arrange them with apparent interest. She wanted to know when we should have some for the table. I told her not yet, as it is my intention to keep them until the green peas are ready. Edward has always been enthusiastic on the subject of ham and green peas, and I think myself that they do go excellently well together. I have always kept hams and bacon in paper bags, and prefer it to other methods. It is impossible for flies and other insects to attack them through the paper, and the atmosphere cannot have free play as it does through the bags of cotton, which of course is an advantage. My mother used to keep her hams in a bin of malt or barley. Of course that would not be practicable with many, as all are not fortunate enough to have a bin of barley; but I should think

they would be very nice if kept in dry bran, oats, or wheat. I think broiled ham is much nicer if the slices are cut very thin. When ham is very salt a little soaking will improve it, but if it has been properly salted, this will not be necessary. "A. H."

To Wash White Woolens.—"A Young Housekeeper" writes: "Put a kettle of clear soft water on the stove and shave enough soap into it to make a strong suds; let it come to a boil, and pour it over the flannels placed in a tub; let stand until they are cool enough to handle, and then rub or squeeze slightly and wring out. If they were very dirty, repeat the operation; if not, make a very weak suds, boiling hot, and after it is taken off the fire put in some blueing and proceed as before; then shake well, and hang up to dry. You will find the flannels will not full up and get too small, but will be as soft as when new."

Hints on Cooking, etc.

Baked versus Roasted Beef.—"Experience" says: "The traditional 'Roast Beef of Old England,' the reputation of which is still world-wide, was certainly *roasted*, not *baked*. Hence our friend 'Aunt Hattie,' in those instructive 'Household Talks,' probably means baked meats, when she speaks of hot ovens, pans, etc., etc. The contrast between beef *baked*, and that which is *roasted* upon a spit made to revolve before the glowing coals, is immense, and the most prejudiced, I think, will pronounce decidedly in favor of the latter method."

Short-cake.—By "Nellie," Ohio. Take 2 heaping tablespoonfuls of lard, fried meat fat, or butter; 2 heaping teaspoonfuls of saleratus, and 1 of salt; rub all into 1 and $\frac{1}{2}$ quarts of flour, and mix quickly with 1 and $\frac{1}{2}$ pints of sour milk (a little sour cream would greatly improve it). Roll out rather thick.

Japanese Cakes.—(One of the nicest of breakfast cakes.) One pint of milk; one and a half pints of flour; one egg; half a teaspoonful of salt. Stir the milk by degrees into the flour; then add the beaten egg, and beat all thoroughly for a few minutes. Bake in 12 earthen teacups, or in a French roll pan.

Cream Pie.—1 pint of sweet cream, 1 egg, 1 teaspoonful of corn starch; a *pinch* of salt; sugar to taste. Bake with an under crust.

Lemon Meringue Pie.—By J. N. Merrill. 1 lemon grated; 1 cup of sugar; 1 cup of milk; 1 tablespoonful of flour; the yolks of 3 eggs. To make the meringues, take the whites of the 3 eggs and $\frac{1}{2}$ of a cup of powdered sugar. Beat the whites to a froth and stir in the sugar. Bake the pie first, then spread on the meringues, and bake only five minutes. (Meringue is pronounced *Me-rang*.)

Rice Meringue Pudding.—One qt. of milk; one pint of boiled rice (not boiled to a pulp, but so that the kernels retain their shape); half a teaspoonful of sugar; the yolks of 3 eggs, and the grated rind of a lemon. Bake slowly for a half hour. Beat the whites of the eggs to a stiff froth, with 4 tablespoonfuls of white sugar, and the juice of the lemon; and when the pudding has partially cooled, spread this meringue over the top, and return it to the oven a few moments to brown nicely.

Bread Meringue Pudding is made in the same way, substituting bread crumbs for rice, and adding a piece of butter the size of an egg, with one more egg.

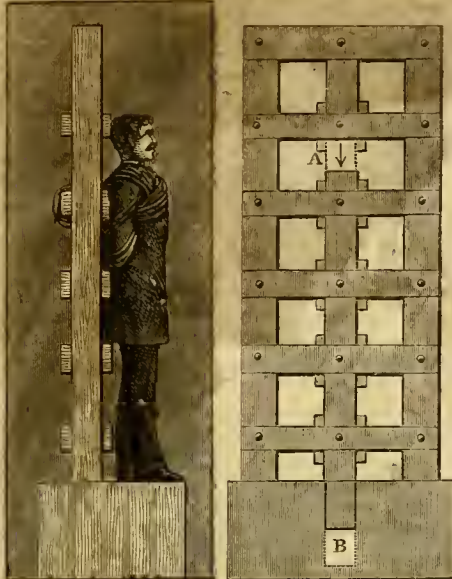
Blanc Mange.—Very simple recipe and easily made. 2 oz. Isinglass, 2 qts. milk. Soak the Isinglass in the milk one hour, and then set it on the back of the stove, where it will heat slowly. When nearly boiling, strain into a bowl, sweeten, and flavor. Stir often, and when nearly cool, turn into moulds that have been first dipped in cold water. When cold, serve with cream and sugar.

Potato Dumplings.—Grate potatoes and thicken with flour; one egg is an improvement.

BOYS & GIRLS' COLUMNS.

The Rope-tying Ladder Trick.

The frame, of which a front and an end view are shown in the engraving, has something of the appearance of a ladder, and is strongly built, the cross-bars being fastened by long screws. It is easy, by arranging beforehand, to find some simple person in the company present to examine the frame, apparently very thoroughly, and to pronounce it—"all right." The exhibitor now introduces his assistant, and fastens him with ropes, strongly wound, to the bars. The *wise man*, called out from the audience,



examines the work, and carefully seals the knots with tape and sealing-wax. A curtain is now dropped between the frame and the audience, the exhibitor being in front of it. Almost as rapidly as it can be related, over the top of the curtain is thrown the coat of the man just fastened to the bars—a signal to raise the screen. There stands the man, just before tied, in his shirt sleeves, and holding the ropes, without a broken seal in his hands! The way it was done can readily be seen by the illustration. The middle bar, A and B, instead of being firmly fastened, is only pinned by a smooth nail with a screw head. This can be readily pulled out by the fingers of the tied man. The bar will then fall, and the rope, without breaking its wax seals, slips off, permitting the imprisoned man to remove it from his shoulders, to throw off his coat, and to stand in a few moments innocently before the audience, holding the rope in his hands.

Learn Something Thoroughly.

The trouble with the young people of our day is, that they skim over a great many things, but do not know anything positively. They catch at the sound of words, as did the lad, who, when asked if he had studied German, answered, "I have not, but my cousin plays the German flute." They study mineralogy, botany, and ornithology, but how little do they really know about the rocks, the flowers, and the birds! For this reason they find but little pleasure in them. When a stranger comes to the place where we live, we feel very little interest in him, but after we are introduced to him, and become fully acquainted with him, and find him very agreeable, we wish to be in his society as often as possible. Professor Agassiz once placed a grasshopper upon his lecture table before a class of young men, and told them that this insect would be the subject of their conversation for the hour. The class smiled at this, wondering what new thing could be told of this familiar little skipping fellow, jumping about their feet every summer. But they found the hour to be only too short, and wished for another, as the Professor opened before them all the curious and interesting facts about the grasshopper, which his careful observation had revealed to him.

We may have an active business, employing us daily, and still find time, if we are in earnest about it, to become well acquainted with at least one of the branches of natural science. One of the most active physicians in the Connecticut Valley collected a cabinet of insects and birds that was valued at \$10,000 when he died, and a college considered itself very fortunate in securing it, while the work of collecting it was the joy of his life. Another, in the same Valley, became the most thorough scholar in the fossil tracks made in the sandstone formations of the vicinity. The writer well recollects the great

pleasure exhibited by an eminent medical professor, who is also a very busy and brilliant writer, when shown a large elm tree; he whipped out his tape measure in a moment to learn its exact size. It proved to be a giant in circumference. All the facts about it were noted in his diary. He was acquainted with nearly every very large tree in his native State, and every thing of interest connected with them. It was delightful to hear him recount the incidents which he had gathered about them.

We have often met a charming old gentleman, who wore a plain and neat Quaker dress, and, until his lamented death, was interested in the charitable institutions of the State in which he lived. He made a large fortune by economy and diligence. Wherever he went he carried with him a convenient little flower case, and whenever his quick eye fell upon a new blossom, or even an old one, if attractive, he gathered it as a great prize. He knew each flower by its own name, had learned all its habits, and seemed almost to hold conversation with it.

What a pleasure to recognize every different bird by its form and note, to call them all by their appropriate names, and to know all their wonderful instincts shown in making their nests, gathering their food, and caring for their young! Choose one of these branches—the rocks, the flowers, the trees, the insects and fishes, or the birds, and then from books, from conversation with those who have information, and, above all, from careful observation, learn all about them; and thus an inexhaustible source of enjoyment will be discovered.

Interior Gardening.

BY MARY LOWE.

I turned the *Agriculturist* for the first time over, leaf by leaf, looking first, as even grown-up children will, at all the pretty pictures. How *alive* its columns seemed, full of fruits and flowers, and all pleasant *growing* things!

I lingered a little over the pages designed for the household and the home, and thought of the contrast between the homes of America, and those of other lands as I have seen them: most particularly of the contrast between the homes of those who till the soil, and the homes of the farmers beyond the sea. Putting aside the temptation to talk about these contrasts, my eye passed on to the columns for boys and girls, more and more gratified to find that here is, indeed, a journal aiming too at the culture of *human growing* things.

Then I fell wondering, how many of the child-readers of the *Agriculturist* have a little garden of their own, and are cultivators themselves. And that thought brought many more, about the great delight of thus making even a *little spot* of our brown earth to blossom as the rose, and about the unconscious culture of the child's heart and mind, going on while the little hands are busy at the weeds. Then I remembered the multitude of children who never have the joy of seeing the buds swell and blossom; who get only grown-up flowers, and those not from green fields, but from hot-houses; whose rosebuds are either pricked to death with a wire through the heart, or imprisoned in rows of violets, so stiff as to destroy all beauty, and stifle all fragrance. And all this led to the fancy that every child in city or country has one field in which he alone can be the laborer; where the good fruit shall testify to careful culture or the desolate land bear witness to unfaithfulness and neglect.

In these gardens of the heart let us walk together for a moment. We shall find bud and blossom, but vile weeds and poisonous fruits may be here also. You see, we may call each pure thought, each noble act, each gentle word, a flower; each real desire to *be better* or *do better* than in the present hour, a bud of promise. Have you never seen in earthly gardens plant and weed growing side by side? and side by side the nourishing fruit and poisonous berry? So grow in the heart-gardens the plants of good and the plants of evil. There are young natures in which the weeds have flourished so that the flowers are sickly and weak, and hidden, and I have seen hearts where many little blossoms of good had sprung up, and would have thriven, but for some one great fault, some tree of vice that cast over every thing near it a black shadow, shutting away the sunlight from the good and pure. Then, again, I have so often found faded flowers among the beautiful growths.

Do you remember a time, boys, in the long ago, it may be, when the voice and smile of your mother were precious things to you? when you loved to do *anything* for her? when thoughts of her kept back sinful words and acts? And has there been a change? If into your soul there has crept a thought that, by this time, you ought to be beyond her control,—then one of the purest flowers in the garden of your heart is a withered, faded thing. And unless the good angel of your childhood weeps until the dew of her tears revives this flower, I would give little for the greenness or freshness of any other blossom in your garden. 'Tis a fatal place for fading to begin.

If the once hated untruth, or the oath you shuddered to hear, slips easily and naturally now from your lips, then,

all along the path of these blighting sins the flowers of purity and truth lie faded. Every burst of passion, every unkind word, or dishonorable act, has blighted something beautiful in us, has crushed out something good.

How discouraging all this would seem if the flowers might not revive again! But whenever we go to work cheerfully and earnestly, pulling out the weeds from this moral soil, and planting in their stead, the good seed; tearing up by the roots the old stubborn tree of laziness; sweeping out the dirt of profanity; throwing the rocks of self-will and pride high over the wall; trampling down the clinging, poisonous vine of selfishness, that twines chokingly about all good in us; when we water with tears of penitence, and use the spade of perseverance, and cultivate carefully the buds of prayer,—then the Great Gardener gives to our labor the dew of His benediction, the light of His smile, and our gardens grow to be so lovely that we may even think of Him as walking there in the cool of the day, and not be troubled or afraid.

New Puzzles to be Answered.



No. 347.—"The same old Coon." Where is the joke?

No. 348. *Conundrum*.—A blind beggar had a brother; that brother died one day; the deceased had no brother; now, what relation were they?

No. 349. *Conundrum*.—A gentleman, looking at a portrait of a young man said, "Brothers and sisters have I none, yet that man's father is my father's son." Explain.



No. 350.—Rebus for our musical readers.

Answers to Problems and Puzzles.

Rebus No. 344, last month, reads, "A saying once spoken a coach and four horses cannot bring it back." (Ace in a G one spoke n a coach and four horses can knot bee ring it back.) Answer to *Conundrum* 346.—Because

they are shadows (shad o's). The following have sent correct answers: H. E. Nelson, Daisy Wilder, Emma E. Camir, George E. Hoxie, John G. Cowden, Grace Gourlay (2), Franklin W. Hall, T. Joralemon (2), S. T. F. (343), W. T. Homadays, Harry J. Meixell, J. West Homer (2), Ollie Moore (2), Chas. H. Fitch (343), Adelbert D. Newton, Fisher Dalrymple, Geo. Allen (2), J. H. Goodwin (343), J. M. B. Larrabee, Jennie Bailey (2), Isaac N. Millikan (2), Jesse Edmonston, Samuel Hunter (2), Charles Mendenhall (2), H. Johnson, Geo. W. Curfman.

No. 351.—Rebus which gives useful advice to all.



Entered according to Act of Congress, in June, 1869, by LILLY M. SPENCER, in the Clerk's Office of the District Court of the United States for the Southern District of New York.

TAKE YOUR CHOICE.—FROM A PAINTING BY MRS. LILLY M. SPENCER.—Engraved for the American Agriculturist.

A fortnight since a great discovery had been made by Susie, and very confidentially announced to Arthur—that Mianna had four little kitties nestled away in a box in the attic. They were curious little creatures, unable to see out of their eyes, and making a pitiable mewling when taken from the warm side of the old cat. It was a dangerous experiment to tell Arthur of the new inmates of the house. Boy-like, he was for having them brought out at once, and subjected to a course of training. Many a beseeching look, and word, and tear, he drew from Susie by his rough handling of the feeble pets.

But now a more serious trouble fell upon Susie. Four kittens are a very pretty sight, and can be borne with for a little time; but to have four additional cats in the house, Mother insists, cannot be thought of for a moment. The time has come for three of them to be placed in the hands of John, the stable-boy, to be sent where all poor, little, unnecessary kitties have to go. "Now you must take your choice," Mother says, as she gathers the little lively things into her lap, and calls the children to her side; "Which one will you have?" Arthur comes to an early decision, and points his chubby finger to the largest and smartest. But Susie hesitates: to choose one is to sign the death-warrant of all the others. She leans against her mother's breast, and stands with a tear in her eye, her finger to her lip, reluctant to decide which one is to enjoy the life of a happy kitty, and which are to cease playing forever. Her mother hurries her choice, but she cannot reach that point. Arthur must decide the question, and Susie will have a good cry over the end of her three unfortunate favorites.

Beecher says to school-girls: "There are two actions which justify you in instantly knocking a man down;

the one is the act of pointing a gun at you in sport, and the other is the attempt to tell you a secret which it is disgraceful for him to get and for you to hear."

Accommodating Goats.

A letter writer from Naples, Italy, tells a pretty tough story about the goats in that city. The cows, he says, are kept hard at work at the plow, while the goats, which are driven into the city every morning from the surrounding fields in great numbers, by goatherds, supply the milk. The driver milks them as they stand before the hotels and private houses of his customers. He says the goats know the places of delivery as well as the boys, and in some instances, at a signal from their masters, will go up to the seventh and eighth stories of the tall houses of Naples, and allow themselves to be milked by the proper families. The writer says (and it is rather a steep statement) that they will permit the party to take only the usual quantity, and will resist any imposition. [This account is at least partly true; the goats are sometimes milked at the doors of customers, which has one advantage for the purchasers—they get the milk unwatered! At Chamouny, in Switzerland, (in France now), we were much interested in seeing large flocks of goats come down at evening from the sides of the Mont Blanc range of mountains, where they were pastured during the day by goatherds—one man or woman to each forty or fifty goats. As a flock passed through the village, the people came to their doors, and one after another the goats voluntarily left the flock and stopped at their several homes, where they were passed through doors into court-yards, and often into the houses themselves. This continued until the animals had all distributed themselves,

and the drivers went off alone. In the morning, at a precise hour, the gathering process went on with equal regularity. Most of the animals wore bells. The regularity, the stately walk of the herd, the systematic order, and the good understanding, with the mutual kindness manifestly existing between the animals and their owners and drivers, rendered the scene always one of interest to our American party.—O. J.]

The Way to Do It.

A young leather dresser, after learning his trade with his father in the country, sought work in Boston. Instead of spending his evenings with idle companions, he sought the library of a young men's literary association, and made those that were seeking in every way to improve themselves his intimate associates. Afterwards he left the city for another State, and with his father and brothers built up a large business, and secured a comfortable fortune. Now comes the advantage of his early self-denial and study. His ability and probity as a business man called attention to his qualifications for the highest place in the gift of the State. He is now the Governor of Connecticut, and is indeed, as he is in name, the JEWELL of the State.

A youngster of five or six years was reading his lesson at school, one day, in that deliberate manner for which urchins of that age are somewhat remarkable. As he proceeded with the task, he came upon the passage, "Keep thy tongue from evil and thy lips from guile." Master Hopeful drawled out, "Keep—thy—tongue—from—evil—and—thy—lips—from—girls." Shouts of laughter from the surrounding pupils greeted this new version.

"THE BEST JUVENILE MAGAZINE EVER PUBLISHED IN ANY LAND OR LANGUAGE"

OUR YOUNG FOLKS.

Great interest has been manifested by the hundreds of thousands of readers of *OUR YOUNG FOLKS* for 1869, in the instructive articles by Mr. TROWBRIDGE, on *Glass-Making* and *Coal-Mining*; in Mrs. AGASSIZ's graphic description of *Coral Animals* and the *Reefs* they build; in Mr. HALE's valuable papers containing excellent hints *How to Talk*, and *How to Write*; in Mr. PARTON's fascinating account of the *Invention of the Compass*, and the discovery of the *Canary Islands*; in Mrs. DIAZ's inimitable *William Henry Letters*,—and in the other articles, stories, and poems, which the Magazine has contained. But perhaps the deepest interest has been excited in Mr. ALDRICH's *Story of a Bad Boy*, which describes boy life and character so perfectly and naturally, with such freshness and charm, that old and young alike read it with the most eager delight. For the benefit of those who have not read it, we give the following sketch of the part already published. In the January number, the *Bad Boy*, Tom Bailey, introduces himself at Rivermouth, states some peculiar views he held while at New Orleans, and describes his voyage on the *Typhoon*, to Boston. In the February number he describes Rivermouth, the scene of the story, and the family and house of his Grandfather Nutter. In the March number Tom Bailey goes to Mr. Grimshaw's school, and meets numerous playmates, with whom he produces *William Tell* with tragic effect, using his Grandfather's barn for a Theatre. The April number relates very graphically his experiences the night before the Fourth of July, and his adventures on that day. The May number describes the mysterious rites and objects of the Centipede Club, and Tom Bailey's fight with his old enemy, Cowway. The June number tells all about Gipsy, the pony, describes Winter at Rivermouth, and gives a spirited account of the great battle for the Snow Fort on Slater's Hill. From the July number we extract a part of the chapter entitled

THE CRUISE OF THE DOLPHIN.

One afternoon the four owners of the *Dolphin* exchanged significant glances when Mr. Grimshaw announced from the desk that there would be no school the following day, he having just received intelligence of the death of his uncle in Boston. I was sincerely attached to Mr. Grimshaw, but I am afraid that the death of his uncle did not affect me as it ought to have done.

We were up before sunrise the next morning, in order to take advantage of the flood tide, which waits for no man. Our preparations for the cruise were made the previous evening. In the way of eatables and drinkables, we had stored in the stern of the *Dolphin* a generous bag of hard-tack (for the chowder), a piece of pork to fry the canners, three gigantic apple-pies (bought at Pettengill's), half a dozen lemons, and a keg of spring-water,—the last-named article we slung over the side, as soon as we got under way. The crockery and the bricks for our camp-stove we placed in the bows with the groceries, which included sugar, pepper, salt, and a bottle of pickles. Phil Adams contributed to the outfit a small tent of unbleached cotton cloth, under which we intended to make our nooning.

We unshipped the mast, threw in an extra oar, and were ready to embark. I do not believe that Christopher Columbus, when he started on his rather successful voyage of discovery, felt half the responsibility and importance that weighed upon me as I sat on the middle seat of the *Dolphin*, with my oar resting in the row-lock. I wonder if Christopher Columbus quietly slipped out of the house without letting his estimable family know what he was up to?

The sun was well up when the nose of the *Dolphin* nestled against the snow-white bosom of Sandpeep Island. This island, as I have said before, was the last of the cluster, one side of it being washed by the sea. We landed on the river side, the sloping sands and quiet water affording us a good place to moor the boat.

It took us an hour or two to transport our stores to the spot selected for the encampment. Having pitched our tent, using the five oars to support the canvas, we got out our lines, and went down the rock seaward to fish. It was early for canners, but we were lucky enough to catch as nice a mess as ever you saw. A cod for the chowder was not so easily secured. At last Binny Wallace hauled in a plump little fellow crusted all over with flaky silver.

To skin the fish, build our fireplace, and cook the dinner, kept us busy the next two hours. The fresh air and the exercise had given us the appetites of wolves, and we were about famished by the time the savory mixture was ready for our clam-shell saucers.

I shall not insult the rising generation on the seaboard by telling them how delectable is a chowder compounded and eaten in this Robinson Crusoe fashion. As for the boys who live inland, and know naught of such marine feasts, my heart is full of pity for them. What wasted lives! Not to know the delights of a clam-bake, not to love chowder, to be ignorant of lobster-cake!

How happy we were, we four, sitting cross-legged in the crisp salt grass, with the invigorating sea-breeze blowing gratefully through our hair! What a joyous thing was life, and how far off seemed death,—death, that lurks in all pleasant places, and was so near!

The banquet finished, Phil Adams drew forth from his pocket a handful of sweet-fern cigars; but as none of the party could indulge without imminent risk of becoming sick, we all, on one pretext or another, declined, and Phil smoked by himself.

The wind had freshened by this, and we found it comfortable to put on the jackets which had been thrown aside in the heat of the day. We strolled along the beach and gathered large quantities of the fairy-woven Iceland moss, which, at certain seasons, is washed to these shores; then we played at ducks and drakes, and then, the sun being sufficiently low, we went in bathing.

Before our bath was ended a slight change had come over the sky and sea; fleecy-white clouds scudded here and there, and a muffled moan from the breakers caught our ears from time to time. While we were dressing, a few hurried drops of rain came lipping down, and we adjourned to the tent to await the passing of the squall.

"We're all right, anyhow," said Phil Adams. "It won't be much of a blow, and we'll

be as snug as a bug in a rug, here in the tent, particularly if we have that lemonade which some of you fellows were going to make."

By an oversight, the lemons had been left in the boat. Binny Wallace volunteered to go for them.

"Put an extra stone on the painter, Binny," said Adams, calling after him; "it would be awkward to have the *Dolphin* give us the slip and return to port minus her passengers."

"That it would," answered Binny, scrambling down the rocks.

Sandpeep Island is diamond-shaped,—one point running out into the sea, and the other looking towards the town. Our tent was on the river-side. Though the *Dolphin* was also on the same side, it lay out of sight by the beach at the farther extremity of the island.

Binny Wallace had been absent five or six minutes, when we heard him calling our several names in tones that indicated distress or surprise, we could not tell which. Our first thought was, "The boat has broken adrift!"

We sprang to our feet and hastened down to the beach. On turning the bluff which hid the mooring-place from our view, we found the conjecture correct. Not only was the *Dolphin* adrift, but poor little Binny Wallace standing in the bows with his arms stretched helplessly towards us,—*drifting out to sea!*

"Head the boat in shore!" shouted Phil Adams.

Wallace ran to the tiller; but the slight cockle-shell merely swung round and drifted broadside on. O, if we had but left a single scull in the *Dolphin!*

"Can you swim it?" cried Adams, desperately, using his hand as a speaking-trumpet, for the distance between the boat and the island widened momentarily.

Binny Wallace looked down at the sea, which was covered with white caps, and made a despairing gesture. He knew, and we knew, that the stoutest swimmer could not live forty seconds in those angry waters.

A wild, insane light came into Phil Adams's eyes, as he stood knee-deep in boiling surf, and for an instant I think he meditated plunging into the ocean after the receding boat.

The sky darkened, and an ugly look stole rapidly over the broken surface of the sea.

Binny Wallace half rose from his seat in the stern, and waved his hand to us in token of farewell. In spite of the distance, increasing every instant, we could see his face plainly. The anxious expression it wore at first had passed. It was pale and meek now, and I love to think there was a kind of halo about it, like that which painters place around the forehead of a saint. So he drifted away.

The sky grew darker and darker. It was only by straining our eyes through the unnatural twilight that we could keep the *Dolphin* in sight. The figure of Binny Wallace was no longer visible, for the boat itself had dwindled to a mere white dot on the black water. Now we lost it, and our hearts stopped throbbing; and now the speck appeared again, for an instant, on the crest of a high wave.

Finally, it went out like a spark, and we saw it no more. Then we gazed at each other, and dared not speak.

Poor little Binny Wallace! How strange it seemed, when I went to school again, to see that empty seat in the fifth row! How gloomy the play-ground was, lacking the sunshine of his gentle, sensitive face! One day a folded sheet slipped from my algebra; it was the last note he ever wrote me. I could n't read it for the tears.

What a pang shot across my heart the afternoon it was whispered through the town that a body had been washed ashore at Grave Point,—the place where we bathed. We bathed there no more! How well I remember the funeral, and what a piteous sight it was afterwards to see his familiar name on a small headstone in the Old South Burying Ground!

Poor little Binny Wallace! Always the same to me. The rest of us have grown up into hard, worldly men, fighting the fight of life; but you are forever young, and gentle, and pure; a part of my own childhood that time cannot wither; always a little boy, always poor little Binny Wallace!

"OUR YOUNG FOLKS" is only Two Dollars a year, and the numbers for January, February, March, and April, 1869, will be sent free to any one who wishes to examine the Magazine, on application to the Publishers,

FIELDS, OSGOOD & CO., 124 Tremont Street, Boston.

ATTENTION HOUSE KEEPERS!

PROOF POSITIVE!

INCREASING DEMAND!

ADDITIONAL IMPROVEMENTS FOR 1869.

THE AMERICAN FRUIT-PRESERVING POWDER.

This PRESERVING POWDER is warranted to effectually prevent fermentation and subsequent decay in all kinds of Fruits, Juices, and Syrups of Fruit, Jellies, Tomatoes, Vegetables, Wine, Cider, &c., &c., and preserve them in as good and wholesome condition as the best "canned" fruit, &c., without the trouble and expense of sealing or air-tighting the jars or cans, and with or without the use of sugar.

It admits of keeping the fruit, &c., for 1 or 2 years, in large Glass, Earthen, or Stoneware Jars, by merely corking with a common cork, or tying cloth or paper over them, and of using or removing the fruit from time to time as wanted, without danger of fermentation from weeks of full exposure to the air.

It saves Sugar.

It saves from 50 to 75 per cent in the cost of Jars.

It is purely antiseptic, and warranted as healthful as Salt, Sugar, Spices, and all other well-known antiseptics used for preserving animal and vegetable substances.

We will warrant it to preserve fruits, &c., equal in color, flavor, and appearance, to the best canned fruit, &c., and at less than one-half the cost of any other known method.

To confirm the above, we add a few testimonials from families of the highest respectability, the originals of which, and others, may be seen at our office, where we cordially invite the public to examine our specimens of fruit, and will be glad of giving any further information.

From (Rev.) Mrs. T. A. LOVEJOY, No. 30 Laight Street, N. Y. City. December 29th, '63.

Mr. Worrall—Dear Sir: I have given your Fruit-Preserving Powders a faithful trial, and am prepared to recommend them to every housekeeper as an indispensable article. I have done up most all kinds of fruits, and am delighted. I have some plums that I left uncovered, as an experiment, and to-night they are as perfect as when first preserved. My grapes and peaches are the finest I have ever seen—not only acknowledged so by myself, but by all who have tried them. This mode of preserving so far exceeds any other as one can imagine. I am prepared to show my preserves to any one who may choose to call and examine them. Success to the American Preserving Powders.

Respectfully, Mrs. T. A. LOVEJOY.

From R. L. BROCKETT, Clifton Institute, near Hooversville, A. A. Co., Md. Jan. 7th, 1869.

L. P. WORRALL, General Agent—Dear Sir: We used your Fruit Preserving Powder last season in putting up tomatoes and peaches. The directions were carefully followed, and with the best results. All have kept well, and we see no difference between those put up with the Fruit-Preserving Powders, which are kept in common stone jars, and those put up in air-tight cans, by the old method. We expect, therefore, to use your Fruit-Preserving Powders next season in putting up our entire supply.

Respy, R. L. BROCKETT.

From REV. R. M. SARGENT, Farmington, N. H. January 1, 1869.

L. P. WORRALL—Dear Sir: A package of your American Fruit-Preserving Powder has given us unexpected satisfaction. My wife applied it to raspberries and strawberries, both as fruit and in jam, which is very difficult to keep, and all were preserved in perfect freshness and parity. She showed it to several ladies who were afraid to try the Powders, and they are much pleased at its success. Company at our table yesterday complimented the fruit, and were surprised when my wife told them that your powders preserved berries so fresh. They are an important addition to household conveniences, and deserve the patronage of all who have fruits of any kind.

(Rev.) R. M. SARGENT.

From S. W. PONDER, Milton, Del. Jan. 11th, 1869.

L. P. WORRALL & Co.—Dear Sir: The package of American Fruit-Preserving Powder that I procured of you last spring proves quite a success. I used it for strawberries, raspberries, and gooseberries. I put them up according to the directions, and they are now in a perfect state of preservation. They have been exposed to both heat and cold. I consider them a great saving of labor and sugar. The fruit retains its natural color and flavor. There is not the least unpleasant taste from the effects of the powder.

Respectfully, S. W. PONDER.

From RICHARD H. DAY, Baton Rouge, La. January 26th, 1869.

Messrs. L. P. WORRALL & Co.—Dear Sir: During the past season, obtained two packages of your "Fruit-Preserving Powder" for trial. Allow me to state, for the benefit of our Southern matrons and fruit growers everywhere, that I tested the merits of your "powders" in the making of several kinds of preserves, as well pies made of dried peaches, and I fully endorse the virtues you ascribe to them; and if further experiment shall demonstrate as I have no doubt it will their great potency in preserving all kinds of fruit, you will have bestowed upon mankind one of the greatest blessings and comforts of the nineteenth century.

Yours, very respectfully, RICHARD H. DAY.

From C. W. HEATON, Farmington, Ill. Jan. 8, 1869.

L. P. WORRALL—Dear Sir: The Package of American Fruit-Preserving Powders purchased of you I used in keeping green corn, which it did to perfection. We are using the corn now, and it is just as nice as that fresh from the cob. I am extremely well pleased with the powders. I think I shall use it pretty extensively the coming year.

Respectfully, C. W. HEATON.

From M. F. CAMPBELL, Sherborn, Mass. Jan. 9th, 1869.

L. P. WORRALL & Co.—In reply to your request in regard to the Preserving Powders, I will say it is the best article for keeping fruit fresh and from souring that I ever saw. I have used the berries, and they are as fresh and as nice as when put in the cans; and one to-day I opened, and it was not sealed tight, and it was sweet and nice as when put in the cans. It is all that is recommended, and you may use my name, and say it is the very article.

Yours respectfully, M. F. CAMPBELL.

From Miss L. O. BAILEY, Romeo, Mich. January 5, 1869.

L. P. WORRALL & Co.—I take pleasure in giving you our testimony in favor of your Fruit-Preserving Powder. We used it for corn, and the results were highly satisfactory. We did not air-tight the jars, and upon the first of January the corn was as good as when first prepared. We also used it for raspberries, without air-tighting the jars, and upon the first of January they were perfectly good, not even the most prejudiced persons could detect the least taste foreign to the natural flavor of the fruit.

It must prove highly satisfactory to every one.

Very cordially, L. O. BAILEY.

From Mrs. J. F. PHIFER, Lincolnton, N. C. January 18, 1869.

Mr. L. P. WORRALL—I made but little use of your Fruit-Preserving Powder last season, receiving it rather late. In putting up a lot of peaches in glass cans, I tried the powders in but two, and at this time they are as free from fermentation as when canned, whilst all those that were put up without, fermented in a short time, and were all lost. I intend to make great use of it in future, believing it to be the most certain mode of keeping fruit.

Respectfully, Mrs. J. F. PHIFER.

From JAMES A. WRIGHT, Notasulga, Ala. January 17, 1869.

L. P. WORRALL & Co.—My fruit was nearly all gone when I received the Powder last summer, therefore did not put up any kind of fruit with Powders, but clingstone peaches; they kept very nicely, retaining the flavor of fruit more than by any other process that I have tried; all who ate of the fruit pronounced it a success.

Truly yours, JAMES A. WRIGHT.

From E. R. GIRD, Hudson, Bates Co., Mo. January 28, 1869.

L. P. WORRALL & Co.—You wish to know how we like the Preserving Powder; in reply, will say we esteem it very highly, and take great pleasure in recommending it to our friends, fully believing that it will do all that is claimed for it. We tried it in several kinds of fruit, all of which saved very fine, but Mrs. Gird is lavish of her praise of its excellence in preserving sweet pickles (peaches), and would say to all housekeepers, try the Preserving Powder, and preserve your delicacies cheaply and effectually.

Very respectfully, E. R. GIRD.

From J. D. MCGINNIS, M. D., Hartford, Lyon Co., Kansas. January 6, 1869.

L. P. WORRALL & Co., New York City—Dear Sir: According to your request I will give you my experience with regard to the American Preserving Powder. I put up some three gallons of peaches in a stone jar which I cemented a paper over, and opened them Christmas day, now two weeks, and as fine as when they were put up. I think better than any canned peaches I ever tasted, some think them better flavored since opened; stood open near the stove in my kitchen, pretty warm most of the time. I think that they are a great favor, as I am a great lover of fruit; did not put any sugar in. I am satisfied that they keep true (peaches) cheaper and much better than the best tin cans.

Yours, with respect, J. D. MCGINNIS, M. D.

From Mrs. SARAH J. RAMSDELL, Plantersville, Grimes Co., Texas. January 30th, 1869.

Mr. L. P. WORRALL, New York—Dear Sir: I would state that the powders received from you last year were all that you say they are. I have peaches now that are as fresh and nice as they were when taken from the tree, and that we have opened jars that was several weeks before the last was eaten and which remained open all the time, and if any difference at all, the last was better than when first opened. I am delighted with the powders, and the more so that some of my neighbors tried to discourage me from sending for them, saying they were a Yankee humbug. I cannot say enough in their praise.

Yours respectfully, Mrs. SARAH J. RAMSDELL.

From Mrs. MILDRED BRITTON, Arkadelphia, Arkansas. January 11th, 1869.

Messrs. WORRALL & Co., New York—Gentlemen: Last spring I purchased a package of your justly celebrated "preserving powder" and was quite astonished at its magical effect. I take great pleasure in adding my testimony as to its being all and even more than you claim for it.

Respectfully, Mrs. MILDRED BRITTON.

From RACHEL DECIUS, Majority Point, Cumberland Co., Illinois. January 12th, 1869.

Mr. L. P. WORRALL:—We received and used one paper of your American Fruit-Preserving Powders last season in canning currants, raspberries, and grapes, and lost none—succeeded in all on first trial. We exhibited one can of each at our County Fair, and was awarded three first premiums in a very respectable collection, embracing fruits in all the various forms, and all the patent sealers in modern use, and we think they were unequalled by anything on exhibition. The weather was warm; the cans had no protection but a paper tied over the top, exposed for three days to open air and sunshine, being something of a novelty, were scrutinized frequently, opened, tasted, and roughly handled—during the entire time exhibiting no symptoms of fermentation, and are still in a perfect state of preservation, while nearly all others on exhibition, with much less handling and exposure, presented more or less indications of fermentation.

RACHEL DECIUS.

From Mrs. L. J. FERNHEAD, No. 193 Bloomfield Street, Hoboken, New Jersey, Dec. 18th, 1868.

L. P. WORRALL—Dear Sir: I am happy to inform you that during the past fruit season I used your American Fruit-Preserving Powder to preserve Plums, Peaches, &c., which, according to your directions, I stored in large Stoneware Jars, and did not seal air-tight, but merely tied a cloth over the top of the jars. During the past two months I have been using the Fruit from the various jars as wanted, and find them in flavor and appearance equal, in fact better, than my best results have been with other methods. The fruits have never exhibited the least signs of fermentation, or of mold upon the surface, and are now in perfect condition. I esteem the Preserving Powder an article of rare and unquestionable merit, and destined to supersede all other methods for preserving fruits, &c.

Yours, truly, Mrs. L. J. FERNHEAD.

From D. L. PHARES, M. D., Woodville, Wilkinson Co., Miss. Feb. 18, 1869.

Messrs. L. P. WORRALL & Co.—Dear Sirs: The package of "American Preserving Powder" received from you last season I used in preserving Tomatoes, Peaches, Pears, and Apples. The fruits are now as fresh and perfect in flavor and appearance as if gathered from the tree, or since this morning. So perfectly satisfied was I, that the powder would prevent fermentation that I put up a number of jars of fruit without even a stopper of any kind, in order to prove its antiseptic powers. These fruits so preserved without stopper, (nothing closing the mouth of the jar but a single thickness of white paper) I have repeatedly exhibited to both eye and palate of visitors, who all aver the fruit is perfect and better than most of the air-tight canned fruit. No method or process can ever surpass yours for preserving fruit in perfection, while the chemicals added are essential to the health of a very large proportion of people, and injurious to none.

Very respectfully, D. L. PHARES, M. D.

From JOHN EDGERTON, Proprietor Vinewood Garden and Nursery. Coal Creek, Iowa, Dec. 18, 1868.

L. P. WORRALL, N. Y.—Dear Friend: We procured a package of American Preserving Powder last season, and used some of it, but have not used all the fruit; yet such as we have is as good as the best air-tight fruit. Am well pleased with it, will want a lot for the coming season, as it is so much easier to take care of fruit than the old way.

Very truly, your friend, JOHN EDGERTON.

From GEORGE E. HULSE, Marlboro', Ulster Co., N. Y. January 5th, 1869.

Mr. L. P. WORRALL—Dear Sir: My wife used the American Preserving Powder the past season, and was highly pleased with it. She used it for preserving blackberries, peaches, pears, and plums, and found that it would do all that it was recommended to do, and even more, for she put it in pickles, and never had them so nice before. I therefore can conscientiously say that it is the best method possible for preserving fruit, being cheap and sure.

GEO. E. HULSE.

From R. G. SMALL, Bayonne, N. J. Jan. 11th, 1869.

Dear Sir: You wished me to inform you of the result of my using the American Fruit-Preserving Powders. I think I can safely recommend it in preference to all other methods of preserving fruit.

Respectfully yours, R. G. SMALL.

Each package will preserve 64 lbs. of fruit, &c., and is accompanied with full and explicit directions for using. Price, \$1 per package; \$4 for 1/2 doz.; \$8 for 1 doz.

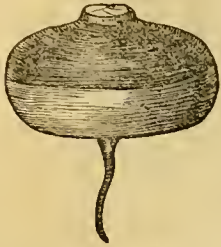
We invite you to urge your storekeeper to get it for you, or that you will form clubs and send price direct to us for 1/2 doz. or 1 doz. packages, and we will promptly forward it by Express.

An Agent wanted in each County in U. S. Liberal inducements offered. For further particulars, address, with stamp for return postage,

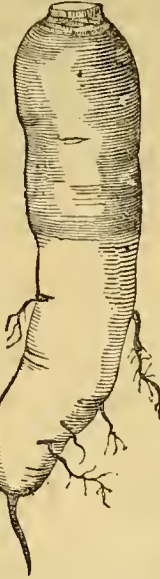
L. P. WORRALL & CO.,
153 Chambers Street,
New York City.

Turnip Seed by Mail.

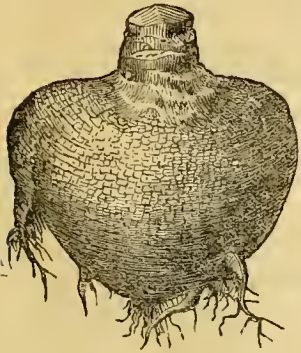
The following varieties, the quality of which cannot be excelled, will be mailed post-paid, to any address in the Union upon receipt of price affixed.



Red Top Strap Leaf Turnip.



Long White, or Cow Horn.



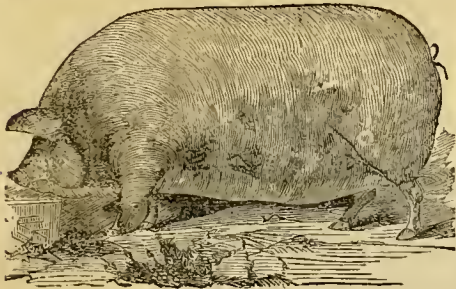
Sweet German Turnip.

Table listing various turnip varieties with prices per oz. and per lb. including Early White Dutch, White Strap Leaf, Red Top Strap Leaf, etc.

Prices for larger quantities to dealers, either in bulk or packets for retailing, will be given upon application.

Our celebrated Seed Catalogue and Guide to the Flower and Kitchen Garden—containing about 150 pages closely printed matter, beautifully illustrated, mailed to all applicants enclosing 25 cents.

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Turnip Seed by Mail.

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Table listing turnip varieties like Rata-baga, Large Yellow French, Red Top Strap Leaf with prices per lb.

ALSO

Table listing other vegetable varieties like Early Dutch, German Tellow, Cow Horn, etc. with prices per lb.

And others too numerous to mention.

We also offer for late summer sowing,

Table listing salad varieties like Corn Salad, Green Curled Endive, etc. with prices per oz. and per lb.

J. M. THORBURN & CO., 15 John-st., New York.

CATALOGUES ON APPLICATION.

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We offer the following varieties of Turnip Seed, which will be sent by mail, post-paid, upon receipt of price affixed.

Table listing turnip varieties like Red Top Strap Leaf, White Strap Leaf, etc. with prices per lb.

Address FERRE, BATCHELDER & CO., 231 Main-st., Springfield, Mass.

To the Seed Trade.

Turnip and other Seasonable Seeds.

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The Largest Stock in the Country. 10 Different Varieties.

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For information as to value and superiority of the Beecher Basket, we refer with confidence to as many of the commission dealers in our markets as have handled fruit in them.

THE BEECHER BASKET COMPANY, Westville, Conn.

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From the best imported stock. All are pure bred. Creve Coeur, Houdan, Duff Cochon, Dark Cochon, eggs \$8 doz. Silver and Golden Spangled Pouter, Silver and Golden Spangled Hamburgh, White and Grey Dorking, White-bied Black Spanish, White Leghorn, Seabright Bantam, \$2.50 doz.

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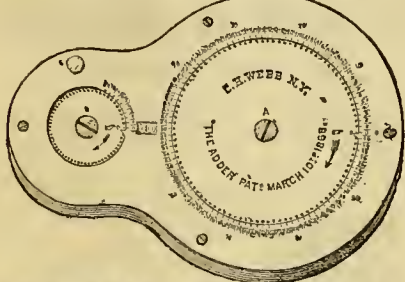
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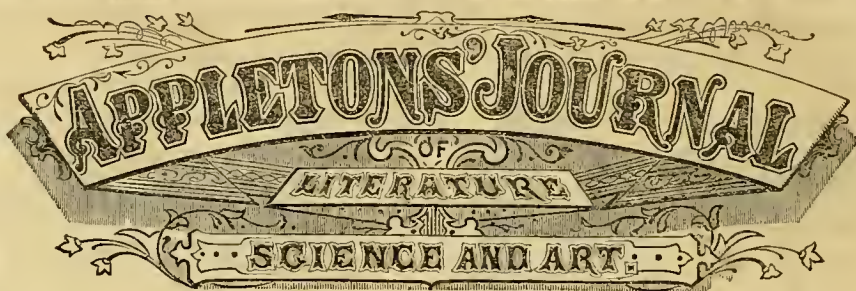
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By Express, carefully packed, so that they will reach the purchaser in perfect order, if the distance does not exceed three days in the transit.

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Early Dutch, Yellow Aberdeen, Golden Ball, Red-top strap-leaf, White strap-leaf, Yellow Ruta-baga, White Ruta-baga, &c., &c., \$1 per lb., 10 cents per oz.

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Gardens in South Bergen, N. J.



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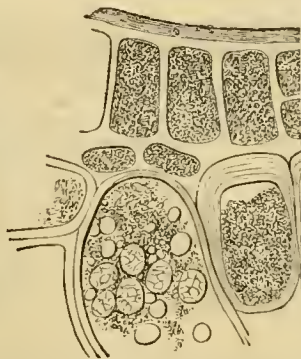
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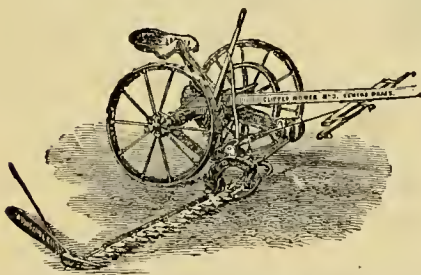
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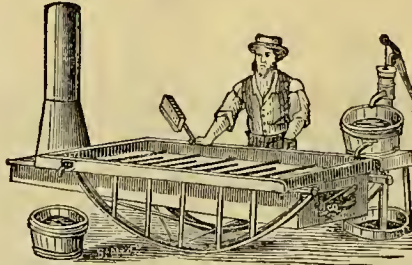
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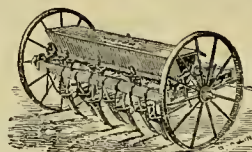
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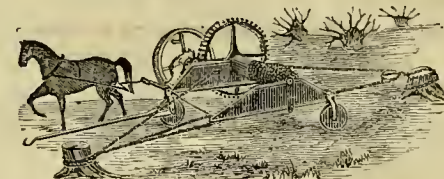
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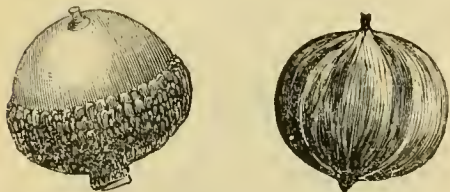
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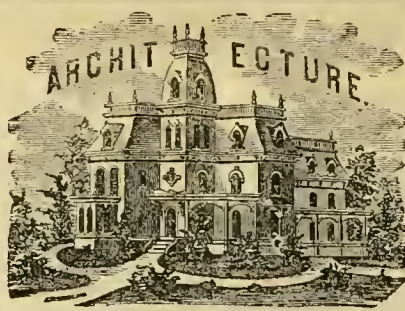
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"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

ORANGE JUDD & CO.,
PUBLISHERS AND PROPRIETORS.
Office, 245 BROADWAY.

ESTABLISHED IN 1842.

Published also in German at \$1.50 a Year.

{ \$1.50 PER ANNUM, IN ADVANCE.
SINGLE NUMBER, 15 CENTS.
4 Copies for \$5; 10 for \$12; 20 or more, \$1 each.

Entered according to Act of Congress in July, 1869, by ORANGE JUDD & Co., in the Clerk's Office of the District Court of the United States for the Southern District of New-York.

VOLUME XXVIII.—No. 8.

NEW YORK, AUGUST, 1869.

NEW SERIES—No. 271.



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LOST THE ROAD.—DRAWN BY EDWIN FORBES, FROM A SKETCH BY THOMAS WORTH.—Engraved for the American Agriculturist.

We are not aware if the artist had Squire Bunker and his wife Sally in mind, when he drew the above picture. Indeed, we think he had not; for the Squire, while old-fashioned in some things, is very modern in his ideas of a turnout. Mr. Worth is one of our rising artists, who, with pen and ink, makes some amusing character pictures, one of which we give here, and others are in store. His pencil, or rather pen, has given a more forcible commentary upon the general neglect of guide-boards in this country than one could write upon a page.

The old couple have brought out the venerable establishment, and are on their long-talked-of journey. In doubt about the road, they at length see a guide-board, but upon reaching it find the inscription effaced, and the board falling into decay. In riding in a strange neighborhood it is pleasant for one to feel that he is on the right road. Neat guide-boards, put at all the important crossings, give one the needed information at sight, and the delay of stopping to make inquiries is avoided. The guide-board should be devoid of painters' flourishes, with

only the necessary direction in plain black letters upon a white ground. Good black paint is wonderfully indestructible, and we can call to mind old country guide-boards in which the letters stand out in strong relief, the wood around them having been worn away by the action of the elements. Iron letters are sometimes used, nailed to the board, and very neat guide and milestones combined, are sometimes to be met with. These helps to the traveler, together with convenient road-side watering-places, give a neighborhood an air of refinement.

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AMERICAN AGRICULTURIST.

NEW-YORK, AUGUST, 1869.

The pressing work of the summer, which needs crowding and watching, the constant care and close planning of the farmer, to do everything just at the best time, have, in a good measure, past. The farmer may employ more labor at more reasonable rates as soon as summer grains are harvested, and opportunities may be had for taking hold of a number of extra jobs,—road-making, draining, building, repairing, etc.,—if one has his regular working force regulated so that the work will go on without his constant supervision. Time might, in all probability, be found for a few days' absence from home for relaxation. This is as important for the farmer and his wife as for the professional man, and a fortnight at the seaside, fishing and bathing, would renew the youth of many a hard-worked wife, and bring roses to the pale face of a daughter who has been sealding curd and turning cheeses or making butter all summer. The poor women cannot get and keep health by light out-of-door work, but are chilled in the milk-cellar, or toasted over the hot stove, getting three meals a day for half a dozen or more hungry men, and are tired out long before night from the character of the work. August is their opportunity: give them a vacation; go with them; spend freely a little of the money which they have earned as much as you, for what will do you all good. If the house is full of city cousins, who want you to make them just as long a visit in the winter as you entertain them in summer, it may be well to postpone this time of recreation for a few weeks for the sake of hospitality, but be sure to plan for a good play spell, either in August or when the Agricultural Fairs take place.

Hints About Work.

Grass.—There may be a little late grass to cut for hay, but July should have seen the first crop of grass well out of the way, and the aftermath will hardly be fit to cut before the last of August or first of September. Mowing grass land is in season. Every day's delay is a loss, the best time to top-dress grass land being the day after the hay is taken home; the poorest time, in the spring.

Mossy pastures, growing up with huckleberry bushes, sweet ferns, and other shrubby plants, may be taken hold of now with great profit. Lay out the ground in lands, and set two or three men with sharp mattocks to cut the big brush; then let a good lively pair of oxen take a heavy, well-loaded harrow over the piece, back and forth, and cross-ways, tearing out the brush, ripping up the moss, and making it all look like plowed ground. Rake or throw the brush together, and when dry, burn it, and scatter the ashes; top-dress with anything you have that is tolerably fine and well composted—plaster, ashes, muck compost made with lime slaked in brine, fish manure, guano, etc. There need be no grass seed sown; enough is in the soil. A mixture of red and white clover, with a little Kentucky blue grass, will pay on barren spots well manured. The manure should be prepared beforehand, and applied before harrowing.

Salt-marsh and Swale grasses are, most of them, in the best condition to cut in August, and no farmer can have too much of them for bedding for his stock, and the manure they bring to the upland.

Spring Grain.—Harvest before the grain is dead ripe, unless it is required for seed. Oats, especially, ought not to stand too long, for the straw loses in feeding value greatly, and the grain gains nothing. The rule is, to cut when two-thirds of the heads have turned yellowish.

Stacks of hay or of grain that are to stand long should be looked to while settling, braced if need be, and re-topped when done settling.

Thrashing.—Grain is a great deal safer in the granary than in the stack or mow. Abundance of food makes vermin plenty. If grain of all kinds were to be thrashed as soon as possible, mice

would not find in the barns such attractive quarters, and would remain much longer in the field exposed to many casualties. Owls, hawks, crows, snakes, cats, weasels, etc., prevent much increase. Grain should be stored until it is marketed, either in well-ventilated bins, in sacks, or spread out in hot, dry, ventilated lofts. Look closely to the thrashing, that no grain is lost in the straw.

Root crops need weeding, and probably, severe thinning. Too many turnip plants are just as bad as weeds to the few that ought to occupy the ground; they grow small, and strong, and tough, when crowded. The growth of all root crops should be from the start. It is as poor a plan to wait until the roots are beginning to fill out before weeding as it is to wait for weeds to get a foot high before hoeing. Keep all clean, and allow room to grow.

Plowing for Wheat.—The weather is so hot that, if we have other work for the teams, we do not like to put all the fall plowing upon them in August; yet it is necessary or best to plow for wheat at this time. Turn over a clover sod perfectly flat, plowing not over six inches deep, apply a top-dressing of slaked lime, and harrow it in. Wait three weeks, and then spread a rich, fine compost, and harrow it in thoroughly. Shares' harrow (which is not a harrow at all) is the best tool. This will leave the land in condition to receive the seed, which should be drilled in about the first to the middle of September.

Weeds.—When mowing land is bare, go through with a narrow hoe, old adz, or weeding spud, and cut up buttercups, daisies, dock, asters, thistles, and all weeds that may then be distinctly seen, cutting two or three inches under the crowns, and lifting them out. Many woody plants may be served the same way in the fence rows and elsewhere, and running briars, rose-bushes, etc., should have like treatment wherever found. Weeds should be mown and consigned to the pig-sty if not gone to seed, in which case let them dry and burn them.

Turnips sown now will make a crop on good mellow soil. Ruta bagas may be sown south of Pennsylvania, and even far north of that will ordinarily make a crop of nice little roots for the table, more marrow-like and delicious than if they had had a longer time to grow.

Buckwheat may be sown south of New York up to the 10th of the month. There is some risk, but the chances are in favor of escaping frost in most localities. For several years late sown has failed.

Swine.—Pen up store pigs and begin to fatten them. Feed peas, vines and all, as soon as the peas have all gained their full size, before the vines have turned too yellow, and add corn meal to the swill. Breeding sows lined now (Aug. 1st) will farrow after the middle of November.

Sheep.—Lambs must be weaned, rams aproned or separated from the flock, entire removal being preferable. See that the ewes whose bags cake are milked carefully, and watched for a week after the lambs are taken away. Give the lambs oil-cake and oats, which will keep them quieter; and place them out of hearing of each others' bleating, if possible. They worry less.

Cows will fall off rapidly in milk unless great pains are taken to keep them up. Corn fodder should be cut and fed daily; a change of pasturage is beneficial, and when they can be turned upon a good clover aftermath they will do well enough.

Working animals need good feed if they are put to hard labor. If possible, turn them out to grass for a few weeks, to be ready for autumn work. Oxen ought to have good long "noon-spells." Horses stand great heat better; a good driver will give his team drink as often as he drinks himself. Work horses will be greatly refreshed by being turned into the pasture as soon as they are cooled off and fed, and left out over night.

Calves.—It is usually best to wean calves that have run with the cows at four or five months old. First teach them to drink, and confine them away from their dams, letting them suck once a day, then on alternate days, and gradually wean altogether, feeding at first skimmed milk or warm

bran mush, morning and night, then once a day, for a few weeks, when it may be discontinued. Otherwise they will fall off considerably in flesh.

Colts should be weaned at five or six months old. Take them away from their dams, and turn them into a small, rich pasture by themselves. Look out that no nails are in the fences or gates, that they can tear themselves upon, and that the fences are strong.

Work in the Horticultural Departments.

It is not easy, in these sweltering days of mid-July, to write out notes for what should be done in the more sweltering days of August. The season, until the second week in July, has been with us unusually wet and cool, but the present days show that the Dogstar has not forgotten us.

Orchard and Nursery.

So much has been said about the marketing of fruits, that one would not think it necessary to add more. Yet when we go through the markets and see the worthless stuff, which might have brought good returns if it had been well packed, we must, at the risk of repetition, say more about

Packing.—We go among the commission-men and find invoices of peaches, pears, and apples, which bring small returns, for the want of proper

Assorting.—Had half the fruit,—the best of it—been sent, it would have brought twice the price.

In New York, and we presume it is the same in other markets, it is difficult to sell a poor article, except to the street vendors, at the lowest price. A large share of the fruit sent had better be fed to the pigs at home, for its destination here is the rubbish heap, and the shipper has to pay the expenses.

Picking and Packing are as important as raising good fruit. The time to pick can only be learned by experience. The fruit should be just in that condition in which it will reach the consumer in good order. Pick by hand, and pack in crates or barrels so firmly that the fruit can sustain no injury from the motion during transportation.

Thinning is still to be attended to. Two blades where one grew before, will answer for grass, but one fruit where two would have grown is much better for pears, etc. Thin remorselessly; it will pay.

Insects are ever to be fought, and we know, from sore experience, how persistent they are. We think we have cleaned the trees, and in a few days there are more. The only way we know of is to keep at them. If the leaves of the pear trees look brown, the "red spider" is probably at them. A magnifying glass will show active red specks of insects. Syringe copiously with cresylic or whale-oil soap, and keep syringing until the red coat gives it up. The late web-worm will soon show itself. Destroy its nests at their first appearance.

Budding is to be done on all stocks upon which the bark will "run," i. e., part readily from the wood. If buds are not well matured and ready, pinch the ends of the shoots to ripen them.

Weeds are to be gotten rid of in but one way,—the old-fashioned one of killing them. If no crops are cultivated between young trees, then cultivate the trees. A light, porous surface is as good as a mulch in a dry time. Those who have facilities for

Mulching, which may be done with bog hay, salt hay, straw, or any like material, will find it a wonderful help, especially in saving young trees, to apply it before the severe drouths come on.

Fruit Garden.

The hints given for the orchard will, for the greater part, find application in the fruit garden.

Dwarf trees often overbear. One good pear is worth two poor ones, and with the late varieties it is better to thin now than not at all.

Straubberries.—We have practiced striking in pots much to our satisfaction, and propose to continue it through this month. It allows one to set his plants whenever he pleases, and the plants go on growing without knowing that they have been dis-

turbed. Plants struck even as late as this and carefully turned out will give a fair show of fruit next spring. Keep the runners off of established beds, unless more plants are wanted.

Blackberries should be kept pinched back. The leading shoot should have been stopped at five feet. Now, keep all side shoots back to eighteen inches, and the reward will be seen in next year's crop. Remove the old canes as soon as the fruit is off, and hoe off all undesired suckers. So with

Raspberries, which have the same general way of growth, except the now popular varieties of

Black-caps, upon the treatment of which an article will be found on page 299.

Grapes.—Tie up the new growth; look out for the large caterpillars and beetles, and pick them off. There is no charmed wash or patent solution half so good as a quick eye and a ready hand. Keep pinching the laterals, as heretofore directed. If mildew appears, use sulphur freely. For the rot which attacks the fruit, we know of no remedy.

Kitchen Garden.

Work now begins to tell. The weeds, which it seemed almost impossible to conquer during the rainy spring, now die after being uprooted, instead of saucily putting up their heads the next day, as if in gratitude for being transplanted by the hoeing.

Beans.—It is not too late to plant for pickling or for salting. The Refugee is considered best.

Cabbages.—Keep them growing. No plant more gratefully repays thorough culture than the cabbage. Slugs are disposed of by slaked lime. In the Southern States plants may still be set.

Carrots should be cultivated until the tops become too large to allow of working between the rows. The late sowings may still need thinning.

Celery.—Keep well cultivated. Plants may still be put out and make a late crop.

Corn.—Select ears for seed before the general plucking, reserving the earliest and best.

Cucumbers.—Save the earliest and best shaped for seed. Pick every day for small pickles.

Egg Plants.—These tropical fellows must be pushed this hot weather. Give liquid manure when the soil is not too dry. When the fruit is large enough to rest upon the ground, put a wisp of straw under it; otherwise it may rot.

Endive is to be treated like lettuce until the plants get about a foot in diameter, when they must be blanched to be eatable. Darkness is necessary, and this is most readily obtained by laying a board over the plants when they are dry.

Melons.—Thin out all that are not likely to ripen. Be careful about saving seed if several varieties have been grown near each other.

Onions are ripe when the tops of most of the plants fall down. Pull them and let them dry thoroughly before storing, and then spread thinly. Onion "sets" are to be stored in the same manner.

Radishes.—Those who like the white and black winter radishes may sow them. We think a raw turnip preferable. To our notion the only decent winter radish is the Chinese Rose-colored. Sow this month or next, according to locality.

Spinach.—Sow for a crop to cut late in fall, but do not put in the winter crop until next month.

Squashes.—As soon as they spread so as to prevent cultivation, let them take root at the joints. Hand-picking is the only remedy for squash-bugs.

Sweet Potatoes should now be making a rapid growth. Keep the ridges clear of weeds, and do not, at the north at least, let the vines take root.

Tomatoes.—The large green "worm" will need attention. It is readily discovered by its droppings. Where these are seen, find the worm and kill it. It is a voracious thing, and spares neither leaf, stem, nor green fruit. Save seed from the vine that gives the earliest and best formed fruit. The great number of tomatoes with names shows what a "flexible" plant it is. By this we mean that a little care in selection will allow one to produce

a "variety." We have over twenty of the newer sorts on trial, and look for interesting results.

Turnips.—In another column we give an article on these. Lime, or a mixture of plaster and ashes, is as good as anything to keep off insects.

Flower Garden and Lawn.

Lawns must be mowed frequently, and the machine should be in operation once a week. This frequent mowing will allow the clippings to be left on the ground as a mulch, and as they decay, as a manure, and thus save much top-dressing.

Edgings and Margins.—Where these beds cut in the lawn keep them well defined. A sharp spade will do for the larger beds, but for small ones a turfing-knife is needed. This is like an old-fashioned chopping-knife, put on a long handle.

"Foliage Plants."—We despise the term, but are obliged to accept it as the one used to designate those plants grown for the beauty of their foliage. Nothing can be finer than a bed of the old *Coleus Verschaffeltii*, seen in the full sunlight against the green of a well-kept lawn. Yet the *Coleus* and plants of its kind need the knife to keep them in shape. Let the bed be a rounded mass of foliage from circumference to center, and do not be afraid to cut out straggling shoots.

Dahlias, should it be a dry time, will need water. These "bloom but to decay," and are at their perfection just upon the edge of the frosts. Keep tied up, and pick off insects.

Roses.—See article on layering on page 299. The everblooming sorts should be cut back as fast as the flowers drop. Cut each flowering stem back to a good bud, which will soon push and flower.

Gladioluses.—We use this plural intentionally, so don't write and ask if it should not have been *gladioli*, because we are writing English, and not Latin. Keep them tied up. If disposed to experiment with seedlings, make cross fertilizations.

Lilies will need stakes when in flower. If seeds are not wanted, cut away the whole flower as soon as it fades. A caterpillar will be troublesome this month. It works upon the under side of the leaves. Put the thumb on one side of the leaf and the finger on the other, and squeeze. That caterpillar will be of no more trouble.

Seeds.—Gather flower seeds just as they are about to ripen. See note on page 299.

Green-house and Window Plants.

There is little to add to last month's directions. They may be briefly summed up thus: Repair the houses and heating apparatus, lay in potting soil, procure pots, see that the stock out of doors is kept in good condition as to water and insects. New wood of most things will propagate readily now. See article on page 257, July, on propagating geraniums and soft-wooded stuff.

Smutty Corn.—C. G. Perkins, Monona Co., Iowa, proposes the following: "After reading the article in the July *Agriculturist* about Smutty Corn, I thought I would give you my experience in the matter. First I would ask a question of those who claim to have lost cattle by eating smut. Did not those cattle eat corn fodder and smut when dry, and did they not drink a great deal of water after eating it? I wish they would be particular in looking into the matter, as I believe the cause of death to be in drinking after eating the corn, and will give my reasons. Previous to 1866, our cattle were watered after coming out of the field, and we lost some every year. For the last three years we have watered them before turning them into the field, and the result has been we have not lost a single head, while others in the county, who did not water before turning into the field, lost many cattle. Five of us in this settlement have over five hundred head of cattle, and last year raised about two hundred and fifty acres of corn, and had a great deal of smut among it, and our cattle fed in the fields from December 1st, after the corn was husked, until it was eaten up, and we lost none. We water our cattle before turning into the field, and do not give them any more water until the next morning. I hope to hear the experiences of others in this matter, as it is a question of vital importance to stock raisers."

The Fairs for 1869.

State and National Fairs.

Table listing various state and national fairs, including American Institute, California, Illinois, Indiana, Kansas, Kentucky, Maryland, Michigan, Mississippi, New England, New Jersey, New York, Ohio, Pennsylvania, San Francisco Mech. Inst., St. Louis, Textile Fabrics, and Virginia.

Horticultural and Kindred Fairs.

Table listing horticultural and kindred fairs, including Am. Pomological Soc., Penn. Hort. Soc., Ohio Grape Growers' Ass'n., Lancaster, O. Hort. Soc., Mass. Hort. Soc., and Newburgh Bay Hort. Soc.

County and Local Fairs.

Table listing county and local fairs in Maine, New Hampshire, Vermont, and Massachusetts, including Addison Co., Caledonia Co., Essex, Middlesex, Worcester, and others.

Table listing county and local fairs in Connecticut, New York, and New Jersey, including Hamilton Ass'n., Lenox Ass'n., Otsego Co., Queens Co., Rock Co., and Saratoga Co.

Table listing county and local fairs in Pennsylvania, Maryland, and Ohio, including Columbia Co., Montgomery Co., Washington Co., Frederick Co., Buller Co., Hamilton Co., Sandusky Co., Warren Co., and Wood Co.

Table listing county and local fairs in Illinois, including Boone Co., Bureau Co., Henry Co., Macopin Co., McDonough Co., McLeod Co., Ogle Co., Saline Co., Schnyler Co., Stark Co., Stephenson Co., Union Co., and Vermilion Co.

Table listing county and local fairs in Michigan, including Central Mich. and St. Joseph Co.

Table listing fairs in Indiana, including Martin Co., Spencer Co., and Vigo.

Table listing fairs in Iowa, including Central Iowa, Clayton Co., Des Moines Co., and Jefferson Co.

Table listing fairs in Wisconsin, including Iowa Co., Ripon, and Winnebago Co.

Table listing fairs in Missouri, including Pike Co. and St. Louis Mech. etc.

Table listing fairs in Tennessee, including Montgomery Co.

Table listing fairs in Kentucky, including Mercer Co.

Table listing fairs in Oregon, including Wash. Co.

Commercial Matters—Market Prices.

Gold has been in much more liberal supply, and has declined materially, sales having been made as low as 134, though the closing figures were 136 1/2. Money has been offered sparingly to the speculative bond owners, who have been forced to pay unusually high rates of interest for such accommodation as they have been in urgent need of, on one day as high as 5/8th of one per cent a day, or equal to 3 1/2 per cent for each week of six business days, which would make the privilege of using a hundred dollars for a year, on such terms, cost fully \$225, as interest is generally calculated among the street houses. Of course, with money so dear, it has been exceptionally difficult to sell business notes, even with the best endorsement. The choicest grades of commercial paper have been discountable at not less than 9/10 per cent per annum, and even at these figures, only to a very limited extent. The effect of this money pressure in commercial and industrial interests has been injurious, restricting operations, and depressing values more or less severely. There has been a very active movement, chiefly for export, though partly for home use and on speculative account, in Flour and Wheat, during the month; and prices, though variable all through, have shown a substantial improvement, closing, however, with less firmness, and less buoyancy. The English crop and weather accounts have been unfavorable, and have stimulated purchases for shipment. In Corn and Oats there has been considerable animation, and prices have advanced. Rye has been scarce and wanted by export buyers. Barley has been dull and normal. Provisions have attracted less attention and have been generally quoted lower. Cotton has been in less request, closing in favor of purchasers. Tobacco has been bought freely, largely for shipment to Europe. Low grades have declined; other descriptions have been quite firm. There has been rather more inquiry for Wool, which closes stronger in price, on light offerings. Hay has been moderately inquired for at about previous quotations. There has been more export demand for Hops, which have been quoted higher, closing with an upward tendency. Seeds have been quiet at about former rates.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for the month ending July 13, 1869, and for the corresponding month last year.

Table with 4 sections: 1. TRANSACTIONS AT THE NEW-YORK MARKETS. RECEIPTS, SALES, Comparison with same period at this time last year. 2. Receipts, Sales, Comparison with same period at this time last year. 3. Exports from New York, Jan. 1 to July 12. 4. Stock of grain in store at New York.

Table for 1868, Dec. 1 to June 10, listing various commodities and their prices.

Table for 1869, Receipts at head of tide water at Albany each season to July 31st, listing Flour, Wheat, Corn, Rye, Barley, Oats.

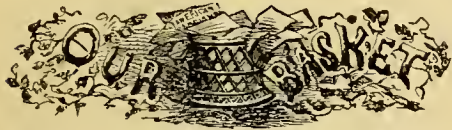
Table for CURRENT WHOLESALE PRICES, listing various commodities like Flour, Wheat, Corn, Rye, Barley, Oats, Beans, Peas, Potatoes, etc., with prices for June 11 and July 13.

New York Live Stock Markets.—

Table for New York Live Stock Markets, listing WEEK ENDING, Receipts, Cows, Calves, Sheep, Swine, Total, and Average per Week.

There has been somewhat of a decline in beef trade since our last report. The increasing warm weather and consequent abundance of green vegetables, which have been cheap this season, cause people to eat less meat. Mutton, too, has been plenty and cheap. "Lamb and green peas" is a favorite dish with most people. The quality of beef has not been above medium; some lots were quite too thin for our market and sold slowly at the low figures given. The best of each drove seldom brought more than 15 1/2c @ 16c., and this only for a few of the "tops." A drove of very fine and fat steers sold by Mr. Alexander were considered cheap at 16c., but such cattle are not desirable during the hot summer weather, most of the wealthy customers having gone to the country, and the laboring classes desire something cheap and good rather than "fancy." Below we give the range of prices, average price, and figures at which the largest lots were sold. Jun. 21 ranged 12 @ 16c. Av. 14 1/2c. Largest sales 14 @ 15c. do. 23rd do. 12 1/2 @ 16 1/2c. do. 14c. do. do. 14 1/2 @ 15 1/2c. July 6th do. 13 @ 16c. do. 15c. do. do. 11 1/2 @ 15 1/2c. do. 13th do. 12 @ 16c. do. 15c. do. do. 14 1/2 @ 15 1/2c. The advance of 1/2c. per pound on beef which we noticed last month has been followed by a decline of at least

½c. and for some grades as much as 1c. per pound. Sleek steers of 800 @ 1,000 pounds about held their own, but very fat ones and poor Texas cattle dropped in price at least one cent. This may be accounted for from the fact that mutton was cheap and beef was wanted only to supply a few regular customers. Most droves were peddled out by the half dozen head or so at a time, butchers buying only to supply present demand. . . . **Milk Cows** are plenty for a dull market. Indeed, they scarcely sell at all. Prices have declined at least \$5 a head, and good cows may be bought for \$10 less than two months ago. Prices range from \$50@85 each. . . . **Veal Calves** have been a little more plenty and trade quite active. Sales are readily made if the animals are fat, and prices keep about the same as those of last month. Fat, fresh milk-fed calves range in price from 9½c. @ 10½c. per pound. Grass, buttermilk-fed sell less readily, mostly by the head at \$7@9 each, or if fat by the pound for 5c. . . . **Sheep** have been more abundant than last month, and a decline in price is the result. Drovers could not hold to their resolve and keep them out of market, and the advance of last month has been followed by a decline. Many of the sheep now coming to market are little better than "store sheep," and farmers would do well to buy their sheep here for feeding purposes. The "culls" of each drove sell by the head at \$2@5 each. Good fat sheep sell for 4c. @ 6c. per pound; lambs, for 7c. @ 11c. Lambs, if fat, sell more readily than sheep. . . . **Swine**.—The market is strong and steady, but we can quote no advance in price. Arrivals have been somewhat varied and most of them go at once to the slaughterers. For dressed hogs, prices range from 10½c. @ 11½c. per pound.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be prepaid at the Post-office where the paper is received.

How to Remit.—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect Oct. 1, 1868, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. *Observe*, the registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. *Buy and affix the stamps both for postage and registry, put in the money, and seal the letter in the presence of the postmaster, and take his receipt for it.* Letters thus sent to us are at our risk.

Bound Copies of Volume XXVII (1868) are now ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (16 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume, (50 cents extra if returned by mail.) Missing numbers supplied at 12c. each.

The Weather and the Crops.—No little anxiety is manifested all over the country between the middle of June and the first of August, by almost all classes of our population, to know something of the prospects of our staple crops. Trade has been dull, and money tight, and everybody is hoping for such crops as will give a sound basis for credit, and make business lively again. By the time this reaches our readers, winter grains, which now (July 12) generally promise well, will have been gathered, thrashed, and in market to a considerable extent, and the reapers will be at work in spring grains. Eastward, we think prospects for an abundant harvest are very encouraging. Winter wheat was very little winter-killed; it has made a good growth of straw, and is well filled. This is the general report we receive it, and certainly we never saw the grain crop

of this part of the country in better condition. At the South wheat has turned out very well, and corn prospects are various; the amount planted is large, and there is no doubt there will be a full average crop. In Pennsylvania, Ohio, and Indiana, farmers are generally jubilant over the fine prospects. West of Indiana, especially in Illinois, Wisconsin, Iowa, and Missouri, the rains during June were most disheartening. The grass crop alone seemed to be uninjured. Corn grew spindling and yellow, small grains made great succulent growth of straw, which will hardly sustain itself. Through this flooded district, we can hardly say that any thing promised well at last advices, though there was time after the first of July for a great improvement, and corn and spring grains may yield well. Powerful rain and hail storms have been prevalent, doing considerable local damage in various parts of the country, but not seriously affecting the general harvest. A large crop of hay has been secured throughout the Eastern and Middle States.

Why Some Letters are not Answered.—We have just turned up several letters which were plainly written, but the address and signatures of which all our powers of guessing failed to make out. If one chooses to flourish let him do it on some unimportant part of his letter, but give us the address and signature as plainly as possible.

Maryland.—"P. S.," Baltimore Co., Md. We thank you for your letter concerning Maryland agriculture, but we cannot publish it, as it refers to political questions, which we must avoid. If such men as the writer seems to be are at work in Maryland, we do not doubt that it will become a "garden State." We congratulate our correspondent upon the improved condition of agriculture in his part of the State, but were we to print his letter, we should have many from that portion which he considers slow in agricultural matters. Please remember that we are the *American Agriculturist*, and cannot present the claims of one State or part of a State to the disparagement of others. Agriculturally or horticulturally considered, our country from the Atlantic to the Pacific is a magnificent one. That this or that State is better than another depends partly upon its natural advantages, but largely upon the people upon whom the task of developing them depends.

Great Exhibition of Textile Fabrics.—The "Woolen Manufacturers' Ass'n of the North-west" have appointed the first full week in August for an exhibition of Textile Fabrics in Cincinnati. There will probably be an interesting display of stuffs and of wool, and the exhibition will doubtless result in great good to the sheep-growing and manufacturing interest. Jas. M. Clark, of Cincinnati, is Secretary.

A Word to the Ladies.—It is a very pleasant thing that we have many lady correspondents. We wish that they would sign themselves Mrs. or Miss So and So. Some, when they use initials only, leave us in doubt. We had a letter from, we will say "C. M. Jones," with nothing in the matter or manner of it to indicate that the writer was a lady. We addressed our reply as to a gentleman, and were informed by the writer that she was neither an "Esq.," nor a "Dear Sir," but an "old woman of 60"! So, also, when a lady signs her full name and gives no indication as to whether she is Miss or Mrs. Juliana M. Brown, it is a little awkward.

Marriages and Deaths.—A number of friends, who consider the *Agriculturist* as their paper, have sent us notices of marriages and deaths, evidently with the expectation that we would insert them. As our paper is for the whole country and not for any one State, we must decline these. We have on a few occasions noticed the marriages of persons directly connected with the paper, as well as the deaths of those who have been so thoroughly identified with agriculture and horticulture as to make the mention a matter of general interest. Should we begin to publish those not so well known—but not less worthy—we could not make room for them.

The Boston "Peace Festival."—This was a grand affair to see, and for ear-stunning music, which one likes to hear sometimes, it has never been equaled. The best music there was when Parepa-Rosa sang alone so sweetly, and yet so loud and clear as to be heard throughout a building 300x500 feet, full of people, and a poor building, too, for music. The whole affair was a grand success in all that it could have been designed to be, for no one could have anticipated the highest musical excellence in such a crowd of performers—more than ten thousand in number. For music alone, we enjoyed more the great Musical Festivals in the Sydenham Crystal Palace, London, in 1862 and 1867, where there were not a third as many performers. But

for a grand gathering and display Boston beat the world! The building was misnamed, as it bore little resemblance to the Coliseums of Italy. The exhibition buildings at Paris, in 1867, resembled, in their elliptical form, the ancient Coliseums. They had rising seats all around from the arena up to the top, 50 to 90 feet high. We have only one criticism to make upon the Boston Peace Festival. As one of the original subscribers, with the understanding that the profits were to go to the benefit of the families of our deceased soldiers, we protest against the allotment of \$100,000 or even of \$50,000 directly or indirectly to one individual. Mr. Gilmore was the originator and soul of the enterprise, but \$15,000 or \$25,000 at most would have been excellent pay, until after at least \$200,000 had been given to the charitable object held out as an incentive.

Wasted Powder.—Some person at the "Farmers' Club" undertook to lecture our friend Bragdon of the Rural New Yorker. With characteristic elegance he referred to him as "A reporter that can fling damaging adjectives much better than he can spread manure, and knows Billingsgate better than he does horticulture,"—and more to the same effect. After all that Bragdon did something severe—he allowed the attack to pass unnoticed.

Our Young Folks.—Messrs. Fields, Osgood & Co. keep their juvenile magazine as fresh as ever. It is the custom with many journals to be less interesting during the summer months, but it is not so with "Our Young Folks." A series of articles on "How to do it" gives some capital lessons in talking, writing, and reading. The rules in writing are sensible and simple, and might be heeded by those who are no longer young folks. 1st. Know what you want to say. 2d. Say it. 3d. Use your own language. 4th. Leave out all the fine passages. 5th. A short word is better than a long one. 6th. The fewer words, the better. These rules are illustrated by instructive examples.

The Great Eclipse on the 7th of August will be an event of especial interest all over the United States. The eclipse will be total over a rather narrow line of country, extending from Alaska through a corner of the British Possessions, re-entering the United States at about lat. 30° West, and passing southerly near the cities of Burlington, Iowa, Springfield, Ill., Raleigh and Newbern, N. C. At a distance from this line the sun will be more or less eclipsed. There are great surmises as to the effect on the weather. No doubt, while the rays of the sun are intercepted, it will be cooler than otherwise, but the effect on the weather will probably not be otherwise perceptible.

New York State Fair.—Remember, entries for the Elmira Fair, which occurs Sept. 14th, will not be received after August 21st.

Sundry Humbugs.—From time to time we are asked, Is this or that recipe reliable? Will it, if followed, make the article or do the thing desired? We do not pretend to answer for the reliability of any recipe, the ingredients of which we do not know. Doubtless some recipes advertised for sale are worth something, but we meet so frequently with those that are perfectly worthless, that we are induced to look with suspicion on all that are highly praised for the wonders they perform. We have before us an advertisement of a process for making vinegar. We cannot answer for its value, for the proprietor tells nothing of his mode of making vinegar. All such notices we are obliged to pass by with mere mention. The trade of humbugging, like most trades just now, is at a stand-still, or doing only a quiet business. Novelties are rare, and the old-fashioned styles gradually growing less. . . . Quack doctors, however, still find plenty of fools to cure of some real or imaginary disease, and all we can say for such is, he who reads the *Agriculturist* and then employs an advertising "Doctor," reads it to very little purpose. All should remember that every one calling himself "Doctor," and warranting cures, or presenting certificates, is a quack, and has no professional standing whatever with his brother doctors, or the intelligent general public. . . . W. B. Dewitt, New York, your lottery game is an old one. No reader of the *Agriculturist* will be verdant enough to send you a dollar for a ticket that you propose to steal of the managers of your proposed lottery, and send to them, not if it is sure to draw a big prize. No, sir; you are on the wrong track. Try again. . . . S. C. Thompson & Co., Boston, propose to have a "great one-dollar sale" of all sorts of goods, and want agents everywhere to sell checks. Yes, just so, Mr. Thompson. "Return the check and one dollar," says the circular, "and we will forward the article," etc. Any person sending money may get the article called for on the check, but we don't believe it, and advise all to buy their dry goods by the

yard at regular stores. The "Prairie Whistle," so-called, is a little instrument to place in the mouth, and by blowing on it, imitate the songs of birds. The circular accompanying this little toy is, perhaps, rather loud in its praises of the whistle, but we do not class it as a humbug. We have one in our possession, and have no doubt that, with practice, the notes of many birds might be imitated. We are again called upon to mention the "Howard Association" and the "Doctors" associated there for the cure of disease. We unreservedly pronounce them unsafe, and advise all to shun them if they would keep well. Among the lotteries proper we have to mention as being particularly active just now, R. S. Barker & Co., Lewis & Co., Hunt, Anthony & Co., and S. W. Waters & Co., all of New York. We know nothing about J. Arthurs Murphy, or his business directory, but his circulars are decidedly quackish. In these days of summer heat, when the thermometer sports among high figures, humbug hunting is a little tedious. We have our eye, however, on two or three precious deus that will receive our attention as soon as we have a little leisure from the press of other business, and the weather will permit. Meanwhile, we warn all persons to avoid every thing that promises riches and great gains without labor.

The Fair List.—The *Agriculturist* goes to press so early that our August number can not be expected to contain a very full list of the fairs. We give, however, many of the most important ones, and shall publish a much fuller list next month. Old Massachusetts is a model State in many particulars, and we presume we owe it to Mr. C. L. Flint, the thoughtful Secretary of the State Board of Agriculture, that the public has every year a complete list of all the county and local fairs of any importance, published in June, or perhaps earlier. The Secretaries of State Agricultural Societies, and of Boards of Agriculture, ought to follow this lead. The result would be that the attendance at the fairs would be greatly increased; that there would be less clashing of interests and fewer fairs occurring on the same days; and that exhibitors who wish to go from fair to fair would be informed where they occur in time to make provision to have the agent's work for the months of September and October all laid out. Besides, the fairs would be much better advertised, and the interests of improved agriculture greatly promoted. We make our annual bow to Mr. Flint—this time, in public.

Pure Water from Foul Wells.—John Taylor, of Maine, writes that he has a well ten feet from his house, and seventeen feet from this his neighbor's drain empty, and the water does not run off. The water used to be good, now it is bad, flat, and full of insects of different kinds. He has cleaned it out to little purpose. The question is, Can the open cesspool affect it?—Certainly; why not? The soil is porous, the well probably a shallow one. At first, the soil purified the drain water that found its way through it; now channels have probably been made, so that the flow is more direct, and as it soaks into the ground, it goes more directly towards the well, and the soil being already saturated with the "stuff," it no longer purifies the water. The well ought to be very thoroughly cleaned out, wooden curbing removed, or renewed if it is used, and the fact demonstrated that the impurity arises from no cause in the well itself. Do this, to the satisfaction of any reasonable man, and then appeal to your kind neighbor to carry his sink drain clear away down hill somewhere. If he does not do it, he can be indicted as maintaining a nuisance, for he may be actually poisoning his neighbors.

Destroying Cherry Trees.—"A. C.," Dahlonega, Iowa, has several Morello cherry trees which sprout from the root. He wishes to kill the trees, root and branch, and has been told that girdling would do it. We should not think that girdling would stop the trouble from the roots. Cutting down the trees and grubbing out the roots will doubtless be required.

Uncle John's Flower Gatherers. By Jane Jay Fuller, N. Y. It is not often that we meet a popular work on botany which steers so clear of errors as this does. We might point out faults, but where there is such an evident intention to be right we commend the work as one calculated to create a taste for the study of plants.

Commercial Fertilizers in Maine.—The value of high-priced commercial fertilizers depends almost altogether upon the amount of soluble and of insoluble phosphoric acid, ammonia, and potash, they contain, provided they are in the condition of a fine powder or easily reduced to powder. Few fertilizers contain much potash, as it is easier supplied in unleached as well as in leached ashes, and is, besides, generally present in tolerably large quantities in the soil. In Maine,

the last Legislature acting upon these facts, passed a law requiring every package of any fertilizer to be marked with the percentage of soluble and of insoluble phosphoric acid and of ammonia, which the fertilizer contains. Penalties are fixed for neglect to do this, and for the fertilizers not coming up to the statement. The practical working of the law after the present trial year will be regarded with great interest.

Houdans—Two Eggs a Day.—"J. D. C.," of Cleveland, sends a statement, clipped from the Cleveland Plaindealer, about some wonderful Houdans which lay 2 eggs a day regularly. The statement has no doubt stretched the truth. Hens sometimes lay two eggs in one day, but it is safe to say no pair of hens ever did it uniformly, as is clearly to be inferred from the article. This breed is famous for laying and for the table,—a sort of combination of the characteristics of the Gray Dorking and Black Spanish, with hardness which neither has. They do not sit.

Bull Harness.—W. Sharp, of Moniteau Co., Mo., promptly responds to our call for a description of a good bull harness. We thank him, and want to hear from others. He writes as follows: "For a cart harness take a regular horse cart harness, with low-top hames, invert the collar and hames, and beat it if you can. For plow or wagon use, harness to match; for bridle, use the common 5-ring halter, either with a bit in the mouth secured to the side-rings by snaps or straps, or, as I prefer, with no bit, and snap your lines in the side-rings of the halter, and you can guide by the nose-band any well-broken animal, double or single. This geared, a good bull is a splendid leader wherever he ought to be used, and that is anywhere that walking is the gait required."

The Comet; or, the Earth in its Varied Phases, Past, Present, and Future. New York: E. J. Hale & Son. This book is a conundrum, and we give it up. Possibly the author knew what he was writing about; we do not.

Steam Plowing in New Jersey.—Col. Patterson, the owner of a large tract of land in New Jersey, made an exhibition of a Steam Plowing Apparatus lately imported. The Commissioner of Agriculture and a number of other distinguished invited guests were present. Among them not one representative of the press, whose name we recognize. However, those who saw the trial report most favorably. Two engines were employed; these traveled freely over the soft ground, went for wood and water, and took positions with entire ease and precision. They drew back and forth between them a double gang of 12 plows; 6 were in the ground at work, and 6 were held up, and put into the ground on the return. Each trip across the field, which was about a quarter of a mile long, plowed 6 furrows 13 inches wide and 8 inches deep, much faster than a pair of horses could go with a single plow, making the same-sized furrow. The plow used is Fowler's, the one alluded to in a basket item on Steam Plows in this number. Besides this apparatus of Col. Patterson's, there are, we believe, but two others in this country, one in Illinois and one in Louisiana.

The Life of John James Audubon. Edited by his widow. N. Y.: G. P. Putnam & Son. There was so much of romance about Audubon's life that the barest recital of its incidents must be of interest. We have here a small installment of the memoirs which the distinguished naturalist and artist left, and are encouraged to hope for more. A charming book for those who can appreciate it.

The Steam Plow.—John J. B. Frink, Esq., Pleasantville, Pa. The best steam plow is by Mr. John Fowler, of Leeds, Eng. The system is a perfect success, and more than five hundred sets of the apparatus are in regular use in England alone. They are also used to a considerable extent in other parts of Great Britain, and largely in the cotton fields of Egypt. The price of the apparatus which won the prize cup offered by the Viceroys of Egypt at the last show of the Royal Agricultural Society of England (for the apparatus best adapted for use in foreign countries, to which transportation is expensive, and where repairs are not easily made) is £708. Its cost, delivered here,—the duties on steam plows having been temporarily remitted,—would be rather more than \$5,000 of our currency. The rolling prairie country of Missouri is much better suited for the use of the steam plow than the majority of the land on which it is used in England, and there is no reason why its introduction there should not be entirely successful. On such land the area plowed in a day should average ten acres, while of stubble land fully twenty-five acres should be thoroughly broken up to a depth of nine or

ten inches with the grubber or cultivator, which does even better work than the turning plow used for grass land. Concerning the amount of fuel and the number of hands, we are not able to give precise information. The work can probably be done for about one-fourth the cost of horse plowing, and done very much more thoroughly. Fuel would probably not be much more costly in Missouri than in England, but manual labor is higher and horse feed is cheaper; consequently the saving would be somewhat less. The greater efficiency of the work, however, and the advantage of being able to perform it more rapidly and more thoroughly, seem to argue that great benefit would result from the introduction of the system in the broad fields of our Western States.

The American Woman's Home; or Principles of Domestic Science. By Catherine E. Beecher and Harriet Beecher Stowe. That two such distinguished authors as C. E. B., and H. B. S., should write a work prepares one to praise it in advance. There is much that is good in the book, though it is withal rather "preachy." Much of the matter we recollect to have seen elsewhere. We are surprised that ladies, either of whose names would sell any book to which it was attached, should allow their work to appear in the contemptible manner of being "sold only by agents." Catherine E. Beecher and Harriet Beecher Stowe are, in a sense, public property. Whatever they may write is worth reading, and their productions should not be exclusively in the hands of book peddlers.

The Neshannock or "Meshannock" Potato.—W. C. Henderson, Meadville, Pa., writes: "In your paper for June, on page 203, you use the following language in reply to a correspondent from Utah: 'The Meshannock, at the East, is known as the Mercer and Chenango.' The potato to which you probably refer originated sixty years since with Mr. John Gilkey, who lived on the Neshannock Creek, five miles above its junction with the Shenango River, at Newcastle, the seat of justice for Lawrence Co., Pa. To this potato Mr. Gilkey, in good taste, gave the aboriginal name of the beautiful stream on the bank of which he lived. James Clarke, then of Baltimore, and Beven Pearson, merchant of Mercer, each took samples of the new potato in his saddle-bags, one to Baltimore, the other to Philadelphia. The people, not familiar with the name given by Mr. Gilkey, called them Mercers, as they were from Mercer Co. The object of this communication is to have this noble potato relieved of the spurious names with which it is loaded. Tell your readers that the name is not Meshannock, Mercer, or Chenango, but Neshannock. The potato has been without a rival for the last sixty years, and has a fair prospect of retaining the same proud position for sixty years to come."

Pear Blight.—"R.," Amherst, Mass., writes the following: "I noticed in your last issue of the *Agriculturist* a paragraph from your correspondent 'Bonne de Jersey,' giving his experience in the treatment of pear blight, and calling for a 'remedy.' Having had some little experience in pear culture, I feel called upon to offer a suggestion, so simple that it may provoke a smile from the incredulous. I observed, some years since, among a row of very thrifty pears, a Bartlett turning black; the leaves and the short spur limbs turning to a crisp, as if burnt with fire; the trunk soon turned black on the side which was exposed to the sun's rays. I pointed out the tree to a nurseryman of considerable experience in horticulture. After examining the tree carefully, he told me to 'cut off all the part' which seemed affected by the blight, and give the tree a good coat of soft soap, diluted, and let it dry on the tree." Somewhat incredulous at so simple a remedy, I followed the prescription. The tree, in a few months, seemed to gain; the next season all the old black bark rolled up, and new, healthy bark formed, and the tree is now as vigorous and healthy as any tree that I have. I have since experimented with like success. All I have to say to veteran pear culturists is, to try it."

Commercial Fertilizers in Connecticut.—The Secretary of the Connecticut State Board of Agriculture, Mr. T. S. Gold, submitted to Prof. S. W. Johnson, 16 numbered samples of fertilizers taken from the stocks of dealers in different parts of the State, and the Professor has reported on their composition. Some of the facts shown are very interesting. Nine manures called "Superphosphates" contain the following percentages of soluble phosphoric acid (the characteristic constituent), viz.: none, 3.19, 7.91, 12.88, 3.93, 0.30, 0.79, 1.38, 5.75. The percentage of ammonia varies in about the same degree, taking the samples in the same order viz.: 1.68, 2.42, 2.80, 4.82, 3.52, 2.59, 0.63, 3.28, 2.04. This is enough to show that the buyers of these manures, depending upon the honesty of dealers and upon both the

honor and intelligence of makers, are frequently defrauded. It is noticeable that the sample which contained the largest percentage of soluble phosphoric acid, and also of ammonia, was the lowest in price, though made out of the State. Mr. Johnson gave simply the number of the sample furnished him. Mr. Gold added the names of the manure, that of the manufacturer, and of the dealer of whom it was obtained in each case. The report is very unsatisfactory in one particular, the bearings and relations of which we shall probably take an early opportunity to discuss more at length. That is, the *commercial values*. Besides, the values are stated in gold; the prices, in currency. Some check should be put upon the expediency of dealers, some strong inducements held out to manufacturers to understand their own business and to make good articles, for a man may be very honest and yet put a very poor article upon the market, and ask a high price for it. It is a delicate matter in such cases to do exact justice. See item on Com. Fertilizers in Maine.

Leached or Unleached Ashes.—Levi Hall, of Cumberland Co., Me., asks: "Are leached ashes worth more or less per bushel than unleached?" Ans.—Commercially about the same; agriculturally, ordinarily less—and always less, every thing considered. Unleached ashes are light, if dry, and contain a varying amount of potash, but enough to give them always great value as a fertilizer. In leaching, a large part of the potash is withdrawn; the remainder is very much compacted and still contains a good deal of potash. If poorly leached, the amount of potash in a bushel of leached ashes sometimes equals that in the same measure of unleached. In this case, of course, it would be worth more on account of the other valuable fertilizing ingredients it contains. Though the potash, which is the most valuable ingredient, be removed by leaching other articles, especially the phosphates, are proportionately increased. Hence for common use we regard one nearly as valuable as the other, though preference should be given to unleached hard-wood ashes, if well compressed in measuring, supposing the leaching of the others to have been thorough.

How Much Wheat Can a Man Cradle in a Day?—Mr. I. P. Walker, of Mississippi, says: "I had a dispute as to the quantity of wheat a good cradler ought to cut in a day, and refer the matter to you."—We have heard men claim that they have cradled five acres of wheat in a day, and that one man bound it up after them. With a light crop, cut high, and calling 16 or 17 hours a day, the thing is possible. But with a fair crop of wheat, of say 25 bushels per acre, two acres is a good average day's work. Here the question has lost its practical interest. What we now want are men who can bind up the wheat into sheaves rapidly and well after a reaping machine. If a man formerly could cradle 5 acres a day, and one man bind it up after him, the race of binders is sadly degenerated. We have cut wheat for several years with one of Wood's Self-raking reapers, which leaves the wheat in good shaped bundles, and a man ought to be able to bind after it more rapidly than after a cradler, when the grain is left in a swath. But we find that the very men who boast of having been able to cradle and bind three, four, and five acres a day, cannot bind and stack up more than two acres after the machine. And yet it is easier binding after a machine than after a cradler. Let these who boast of how much they can cradle in a day turn their attention to binding, and we can, for a few years, give them a chance to exhibit their skill and activity. Cradling is obsolete. We know of but one way to reconcile those facts. The four and five-acre-a-day performances were mere "spurts."

Barley vs. Corn.—"C. H. T." asks if a bushel of barley is worth as much to feed out as a bushel of corn.—A bushel of barley is only 48 lbs., and seldom comes up to the standard, while a bushel of corn is 56 lbs., and generally overruns. So that even if 100 lbs. of barley is as nutritious as 100 lbs. of corn, which is doubtful, it would require 7 bushels of barley to be equal to 6 bushels of corn. A little barley meal mixed with corn meal for pigs is thought by many farmers to make more and better pork than corn alone.

Farmers "Lying on their Oars."—To give an idea of the feeling of farmers over a large section of the West, a single letter will suffice. It comes from "J. C. K.," of Marshall Co., Ill., and is dated July 21. "We are literally drowned out here, and have been lying on our 'oars' now for almost three weeks, waiting for it to stop raining, and still it rains. What are we to do? Our spring wheat and oats will all go to straw, and our rye will be lost on account of the ground being so soft, that we can't run a reaper to harvest it. Our corn looks as though it had the hollow horn, yellow as ripe wheat, and a great deal of it has not been plowed the first time,

and looks as green as a meadow with weeds. There are farmers here in the garden spot of Illinois, and of the world, who will not raise enough corn to feed their stock, as the corn is small, the weeds large, the ground wet, and hands scarce, so that we can't clean it out in time to make good fodder.—at least the most of it is so, and if I have not been misinformed, it is pretty much the same all over the West. Would not this be a good time to organize a Farmers' Club and discuss the laying of drain tiles and other matters connected with the farm, as we have the 'blines' the worst you ever saw, and need something to put in our time, at these rainy days? The salutation of every farmer you meet is 'Good morning. When do you think it will stop raining?'"

Plata Ducks.—W. M. Brockfield, St. Louis, Mo. These ducks are a variety of the Musk, (improperly called Muscovy). The original stock came from the La Plata River in South America, and is different from the common Musk ducks, chiefly in color, and in having, we believe, less of the red, carunculated skin about their heads. Their color is silvery-white, or white with slate-colored spots. If Musk or Muscovy ducks have any advantages over common ducks, we do not know what they are. They are tender, not bearing our winters well; they fly like kites; and the drakes are large and have a musky smell, from which comes their name. The ducks are no larger than common ducks, and pairs do not weigh more than good Rouens or Aylesburies. The "mongrels" produced by crossing Musk drakes with common ducks are large and good eating. They do not breed.

Three-horse Ewener or Clevis.—We find by an advertisement of G. H. Gale, Kalamazoo, Mich., that the idea of a Three-horse Ewener, as described and credited to Mr. Mitchell, on page 233, is claimed as a patented right by a "Three-horse Clevis Manufacturing Co.," in the place above named. We have no knowledge as to priority of invention or of facts, save those given.

Trial of Mowers and Reapers at Sedalia, Mo.—A trial of mowers and reapers which has excited a good deal of interest occurred under the patronage of the Pettis Co. Agricultural Society, on the 22d of June, near Sedalia, Mo. There were forty entries, and an experienced committee of judges, of which the President of the Society, Major Gentry, was Chairman. The machines were classified as follows: Self-raking Reapers, Droppers, Hand-rakes, Combined Machines, Mowers. Interest centered in self-raking reapers, and in this class Wood's machine took the first prize. We have not seen a full list of awards in the other classes. This is considered the greatest trial of harvesting machines ever held west of the Mississippi.

Sights and Sensations in France, Germany, and Switzerland. By Edward Gould Buffum, N. Y.: Harper & Brothers. The story of European travel has been told over and over, but never more pleasantly than in this posthumous work of a well-known American journalist. He takes certain salient points and tells all about them. We have derived much pleasure from this book.

Grape Queries by "Johnny," Blairsville, Pa.—We do not know what you mean by "slugs" on the vine. If you mean caterpillars, hand picking is the best remedy. If vines are trained properly, all parts are within reach, and the task is not a heavy one. As to keeping grapes, that depends upon the variety. Concord and other soft grapes will not keep under any circumstances, while those with a thick skin, like the Catawba and Diana, readily keep until New Year's. After the grapes have shrunk a little, put them in boxes of about five pounds each, and keep them cool.

Strawberries at Mt. Pulaski, Ill.—"O. A. A." writes: "I have been endeavoring for a few years past to ascertain by experiment what kind or kinds are most profitable for me, and am fast settling down on the Agriculturist. I received it of you with the paper, and set a bed of it in the spring of 1867, which has remained ever since. At the same time I set the Russell, Triomphe, and some others. The first season the Russell did the best, but last year and this the Agriculturist has been twice as productive as the Russell, and has proved itself the hardier. Last winter, which was particularly trying on strawberries, made an end of the Triomphe. Mine were all unprotected, and looked so bad in the spring that I expected no fruit, or very little, but the Agriculturist was really fine. In the fall of 1867 I procured some plants of Jucunda and Wilson. Of the Jucundas I have now less than my original number, and have had perhaps 3 or 4 fair-sized berries. I don't think it is going to do any thing for me. Still I intend to keep it a year or two longer and give it protection, if it doesn't

die out before winter comes. The Wilsons gave me this year a moderate amount of fair fruit, but they must mend their pace if they catch up with the Agriculturist."

Running out the Land with Guano.—"F. G.," Vineland, N. J. The larger the crops you take from the land, the quicker it will run out. If you have a credit at the bank for \$10,000 and want to use the money now, will you draw it out a few hundred dollars at a time? No. You make a check for the whole amount at once, and use the money. The soil is a bank; you have a credit there which consists of all the immediately available plant-food in it, without reference to whether it was formed there or you put it in. A crop is a check. It is impossible to draw out all the fertility with one crop, but if you wish to do so as nearly as you can, use Peruvian guano and highly concentrated, stimulating manures. If you take care that you return to the soil as much as you draw out, or a little more, there will be no exhaustion; but if you keep on drawing without making equivalent deposits, of course you will run out the land as truly as you would your balance at the bank. We believe in getting as big crops as possible, but in keeping the soil good, too.

A Problem—Rye.—A correspondent of the *Agriculturist* writes: "In this section of country (Ulster County, N. Y.), the snow and ice covered the ground for about four months last winter, and there was little or no frost in the ground. Where new rye of 1863 has been sown, it was damaged greatly, and much appeared dead in the roots; where the old rye of 1867 was sown, it came out fresh and green. Why this difference?"—If this is a fact, it is a very important one; but we apprehend more is due to the character of the soil than to the seed. Please thoroughly investigate soil, manuring, time of sowing, etc.

Dry Earth as a Deodorizer.—"M. L. H.," Lancaster Co., Pa., thinks that the talk about dry earth as a deodorizer is nothing new, and refers us to an article by the Rev. H. Monle, in the Patent Office Report for 1860. It is upon the basis of the investigations of this same Rev. H. Monle that all the subsequent talk rests. The Earth Closet Co. give him full credit for his discovery, and we have done so frequently.

Tomatoes from California.—Mr. Chas. Drake, No. 3 Hudson St., N. Y., brought us on July 13th some tomatoes sent by Drake & Emerson from San Francisco, by railroad. They were picked too late for so long a journey, and were a little over-ripe.

Small Fruit Seed.—J. A. Hall, Washington Co., N. Y. Crush the fruit and wash out the seeds of your raspberries, blackberries, etc., and mix them with sand. They will keep in a cool place until spring, when they should be sown early. Strawberries, for which it is now too late, will make good plants if sown the same season on the fruit ripens.

Fruit Preserving Powder.—The many who have asked about this have already found their answer in the July number. We have there said all that we know about it, and are sufficiently pleased with what we have seen of it to give it a trial.

Chinese Yams.—We do not recommend their cultivation, except as a curiosity. The little bulbs from which they are propagated are sold at all the large seed stores in the spring.

Apples and Quinces from Cuttings.—"J. S. B.," West Falmouth, Mass. Very few apples will grow readily from cuttings, and these are not of kinds desirable for fruit. Quinces are usually propagated from cuttings, which should be made in the fall, and either set then, or buried where they will callus, and can be put out very early in spring.

Calycanthus or Sweet-scented Shrub.—"Polk City." This shrub is not usually raised from seed. The plants are to be had of all nurserymen who keep ornamental shrubs at all, as it is one of the most common.

Heating a Green-house.—J. Doane, Norfolk Co., Mass. Drain pipes will answer for your flue after the first 50 ft. Their diameter should be that of the flue. Wood will not answer for any part of the flue, nor is it safe to use it for the chimney outside.

Seed Peas.—"J. P. F.," Grand Rapids, Mich. We are told on good authority that if peas are placed in a bottle or other closed vessel with a small quantity of spirits of turpentine or chloroform, the larva of the beetle will be destroyed. We have not tried it.

Graham Meal.—"L. S." Graham meal is made by grinding wheat without bolting. It contains all of the wheat, the same as corn meal contains all of the corn. If our people would eat more of it they would be healthier.

"Supposed to be a Diamond."

A correspondent in Indiana sends us a fragment of a stone which weighs between 8 and 9 ounces, and which is "supposed to be a diamond." The specimen is granular quartz, and breaks between the fingers almost as readily as a piece of loaf sugar. Had it been a diamond our friend could not have broken off the sample, and a diamond of the size of the bit sent would have made us rich. It is one of our disagreeable duties to dispel illusions, and the sender will not thank us for telling him that his stone is of no more value than any other stone of the same size. There are probably "diamonds" on the place where this was found, but they must be plowed for, the harrow must be used, seeds must be sown, and there must be reaping and gathering into barns,—but the jewels are hidden there.

Butter Making in Kentucky.

An energetic and intelligent young farmer in Kentucky proposes to go into the dairy business, and writes to ask our opinion in regard to his probable success or failure. He has a farm of over two hundred acres of excellent land, with abundance of good living water, lying near a railroad station, giving direct access to Louisville and Cincinnati, where choice fresh butter commands a high price. Near the house is a fine spring, running out of a bluff, affording a splendid site for a spring-house, milk-room, etc. The soil is a blue and gray limestone, with a clay subsoil, and, when impoverished by overcropping, is speedily restored to a high state of fertility by allowing it to lie in grass. Winter wheat is not a very profitable crop owing to freezing out in winter; but rye, oats, and corn, flourish admirably, and they have the finest of blue grass pastures. Timothy and clover grow finely, but the blue grass crowds them out of the permanent pastures. We can see no reason why a dairy would not succeed. It seems to be just the situation for either butter or cheese making. We should combine with the dairying, cattle raising and fattening. The profit of butter making for regular city customers will depend a good deal on having a steady supply of fresh butter at all seasons of the year. The blue grass pastures, which afford green food in winter, will be especially valuable in enabling our correspondent to make winter butter. By keeping a thoroughbred Short-horn bull, calves would be obtained from good common cows that would probably be excellent milkers, and if not, would fatten readily for the butcher. With liberal feeding, a dairy of such cows should average two hundred pounds of butter a year. Half the cows should come in in the fall, and half in the spring, and pains should be taken to provide a liberal supply of corn fodder, carrots, mangels, and other milk-producing food, so as to insure a good quantity of nice, well-colored winter butter. Rightly managed, such a business will yield good profits.

Brown Bread.—"L. S." This is a very much misused name. In N. Y. City it applies to bread made of Graham meal. In New England the term "brown bread" is given only to that delightful compound made of rye meal and Indian meal.

Raspberries in Georgia.—"A. N.," Rome, Ga., says that the Brinckle's Orange makes its growth early, ripens its wood, and then makes a second growth which is cut by the frosts. We do not believe that any of our Northern varieties of raspberries will do well in the Southern States. The Fastoff has been the best. Our friends in the warmer States have been remarkably successful with apples, and they must now try to get a raspberry from the seed that will succeed with them, and it will be pretty sure to do well with us. Mrs. "A. N." has an excellent field for experiment.

The First Milk of a cow after calving is purgative, and might have a bad effect on hogs, but we should think it could not be dangerous unless fed regularly, day after day. It is used as human food to some extent in some parts of Europe, without any evil effects.

White Clover.—In seeding down land intended for pasture it is a great mistake not to sow a pound or two of white clover with the red clover and timothy. It will add greatly to the growth and value of the pasture.

The Alton (Ill.) Horticultural Society.—This Society now puts out its proceedings in a neat pamphlet. We have a notion that it is doing more good than all the other Societies in the country put together, and for this reason: its members get together, have their talk, and immediately publish it, and one does not have

to wait until the end of the year to find out what has been done. In the last report we find the raspberry rust under discussion, and according to our observation Mr. Riley is right. We have it in plenty on both wild and cultivated plants. The following resolution was discussed, but laid on the table.—"Resolved that we recommend no variety (of strawberries) for market but the Wilson." It was tabled by a close vote, and yet the Society could have passed a much worse resolution.

The Moon Again.—"L. M. Y.," Pittsburgh, Pa. It is said that the Japanese say their prayers by revolving a stick which is hung by a pivot in the center. We wish there was some such rapid way by which we could answer moon, chess, quack-doctor, and other ever-recurring questions. With some years' experience we have had average success in gardening, and we have never given a thought to the moon. We have a notion that if one manures well and sows at the proper time, and transplants when the weather is moist, or if in dry weather, waters the holes into which he puts the plants, the moon won't trouble him if he don't trouble her. Our correspondent may not be "answered scientifically," but we believe that he is common-sensical.

Another Bird-house.

—A correspondent in Danvers, Mass., sends a drawing of a bird-house made from flower-pots and saucers. He says nothing about fastening the parts together, which we should think it necessary to do with a little water-lime or other cement, else the birds might find themselves houseless during a violent storm. "The bottom board is nailed to the top of the pole; upon this is set a five-inch flower-pot, which is covered by the saucer of an 8-inch pot; upon this is placed a 5-inch saucer, and the whole surmounted by an inverted 2-inch pot. The hole can be easily knocked out, and trimmed with a jack-knife—the soft burned ware whittling as easily as slate pencil."

—A letter before us is a sample of others. A correspondent writes to have an address changed, order a book, and then propounds a question which he wishes answered by "return mail." A letter of this kind goes first to the book clerks, then to the mailing clerks, and after several days it reaches the editors. If the editors see that the question is a purely personal one, and there is no return postage enclosed, they answer it after they have disposed of all of the prepaid letters, and it will usually happen that many mails will "return" before the writer gets an answer. Our editors are as good-natured as most people, and spend much time that they might devote to their own uses in answering correspondents, but they have a way of first disposing of the letters in which postage is enclosed.

By "Return Mail."

Veterinary Education.—"C. G.," Trumbull Co., O., writes: "Please give me the address of the best Veterinary College in the United States—one that you can recommend to a person wishing to study for a veterinary surgeon. Good veterinarians are needed all over the country."—We are glad to get letters like this, and wish a thousand young men were inquiring where to get veterinary educations. The New York College of Veterinary Surgeons (Lexington Avenue and 32d Street, New York City) has good facilities for instruction, and as instructors, veterinary surgeons not only highly educated in their profession, but high-toned scientific men and physicians, who, though ministering to the wants of animals, eschew quackery in all its forms, secret remedies, nostrums, ointments, and the like, from which most persons, who claim to be veterinary surgeons, and write V. S. after their names, derive a good part of their incomes. We believe that there is no profession which offers to young men of the right principles such brilliant opportunities to make money and character, and to be of great service to individual patrons, to the community at large, and to

the government, as this. Many horse doctors are and have been quacks and charlatans, and at the same time well-meaning men, who impose upon themselves as much as upon the public. With a thorough education, the veterinarian is in a position to interpose his skill and his counsels to prevent those terrible plagues which often sweep away national and private wealth, and bring disease and death to both animals and mankind. We believe that the time will soon come when people will wonder that it could ever have been a reproach to be a "horse doctor." Dr. John Basteed (the President of the N. Y. College of Veterinary Surgeons) and his associates have established the only veterinary college in the United States, which, so far as we are aware, has the confidence of our best physicians and scientific men.

State Fairs—A Suggestion.—Everybody who has ever been to a fair knows how difficult it is to get anything to eat. One would suppose that provision would be made for this; but we seldom succeed in finding even decent food at any fair, though none so noticeably bad as at the N. Y. State Fair, held last year at Rochester. One must have been on the verge of starvation to eat the "hunks" of muddled meat placed before him. We dined on beets, and left feeling glad it was no worse. At the Ohio State Fair there was an admirable arrangement whereby all who came with baskets and parcels had them checked and taken care of without charge. The majority of these baskets contained eatables. Let this feature be introduced into our fairs, and visitors will go with greater comfort. It would not cost much to do it, and it would give satisfaction to hundreds of visitors.

Improvement of Agriculture in Kentucky.—A farmer in Kentucky writes: "Our system of cultivation and crops are undergoing many changes. We accept the new condition of labor with the hope that it will redound much to our social as well as agricultural advantage. We have more railroads and turnpikes under project and construction than during the whole period of slavery, and I think that Kentucky will soon become one of the very best agricultural States in the Union. We neglect too much the making of manure, but it is now receiving more attention. If our farmers would study politics less, and agricultural papers more, it would be much to their advantage."—This is the true doctrine, and we are glad to know that the power, influence, and circulation, of the agricultural press are constantly increasing in all parts of the country.

John T. Norton.—Mr. John T. Norton, of Farmington, Conn., died at his home on the 13th of June, in the 73th year of his age. He has been for many years known as a warm friend of progressive agriculture, and a breeder of choice stock. Several years ago he bred Short-horns, and was one of the earliest importers and breeders of Southdown sheep in the country; but his reputation as a careful breeder rests upon the fine herd of Jerseys which he imported in connection with the late John A. Tainter, and bred with great care for many years. Mr. Norton was bred a merchant, and was associated in business in Albany, N. Y., with Henry W. & Edward C. Delevan, and with Erastus Corning. That accuracy, energy, and liberality in his dealings which enabled him to retire from business comparatively early in life with a handsome property, made him an unusually successful farmer. The first funds for the establishment of a Chair of Agriculture in an American University were contributed by Mr. Norton, and his son, the late Professor John P. Norton, of Yale College, was the first incumbent. He will long be remembered as a noble and liberal Christian gentleman, and patron of agriculture.

What Fowls to Keep.—The choice of breeds is so much a matter of fancy, that one can hardly advise another about them without a long dissertation. Brahmans are good layers, sitters, and mothers, and are great favorites; heavy fowls, active, but will not fly; flesh good. Light Brahmans are not very expensive; Dark, now, are quite so. White Leghorns are persistent layers, do not sit, fly like pigeons; very pretty, nice, economical fowls. Of French fowls, select Houdans, which are good sized, speckled, homely fowls, persistent layers, and hardy; excellent for the table. If you must be economical, buy two trills of the breed you prefer, and a lot of common fowls, selecting light-colored, large bodied, feather-legged pullets; next spring save the eggs from your pure pullets, and you will stock your yard with forty or fifty fowls with little expense. Should you wish a breed of more fancy fowls, you have your choice among Polands of various colors, Hamburgs, etc., which are great layers; Cochins, which are not superior to Brahmans; Black Spanish, which lay the handsomest eggs laid by any fowl, and many of them, are very beautiful, but delicate, as are also the Creve Coeurs and La Fleche breeds, which excel most others as layers and table fowls.

The Charles Downing Strawberry.—We put out plants of this variety this spring only, and our knowledge of its fruiting qualities comes from others. Mr. W. S. Carpenter, who has, after our friend Downer, had the most experience with it, speaks in the highest terms of it. Mr. Wm. M. Doty, of Star Landing, N. J., has given it a careful trial. From a bed 30 feet square he picked from June 10th to the 30th enough fruit to bring \$268.25, besides selling \$6 worth of plants. It is not fair to reckon an acre by the product of a small patch, but had an acre been equally productive with this small piece, it would have produced \$1616.00. We thank Mr. D. for his answer to our question "Will strawberries pay?" Now let us have the other side. We may add that some berries from Mr. Doty confirmed our impression that the Charles Downing has more of the wild strawberry flavor than any cultivated variety with which we are acquainted.

Strawberries in New Jersey.—The West Jersey Fruit Growers' Association, which includes the large growers at Cinnaminson, Moorestown, and all that-away, have sent us a report of a meeting held "5th month 10th," whereat a vote upon the best five varieties was taken. The result was as follows: Albany (Wilson), Agriculturist, Lady Finger, New Jersey Scarlet, and Downer's Prolific. This strikes us as a most sensible vote. The Wilson takes the lead, the Agriculturist is next; this variety on some soils is wonderful. Then comes the Lady's Finger, which is the firmest berry of which we have any knowledge. New Jersey Scarlet we do not know so much about, but it is found profitable in Burlington Co. Downer's Prolific we are glad to see in the list. It is sour and not very firm, but for a near market we have no doubt but it is a profitable berry.

Transportation Wanted.—Many in the warmer States have gone largely into raising fruits and vegetables for the more Northern markets. As we have before stated, a share of these will be disappointed in their returns, for the reason that their produce was not properly packed; but others, who have exercised all due care in sending their stuff to market, will meet with heavy losses for want of proper means of transportation. We have had sore complaints on this score, and have seen perhaps tons of cherries, strawberries, etc., from further south thrown into the scavengers' heap because they perished on the voyage. It is very hard on fruit and vegetables to pack a large quantity in the close hold of a vessel; but when that vessel is a steamer, the heat from the boiler makes decay the more certain. Now what is wanted is a line of vessels which will bring things from southern points in good order. If the existing lines cannot so modify their arrangements as to accomplish this, then the parties interested must get together and establish their own line of steamers. The thing is practicable, and will ultimately be done one way or another.

The Cincinnati Horticultural Society will hold its annual exhibition on Sept. 7th. We warn all people near Cincinnati to be on hand. The exhibition of last year was a grand success, and this is to be its successor. Boston and Philadelphia must look out for their laurels, for Cincinnati has waked up.

The Geneva, N. Y. Horticultural Society has held its first exhibition, and everybody concerned is delighted at its success. We judge, from looking over the list of contributions, that the exhibition must have been one of great interest, and we hope this young Society will go on and prosper.

Wardian Case.—"S. E. S.," Alleghany, Pa., made a Wardian case with a glass globe, and the globe burst. It could hardly have happened "from the globe being air-tight." The accident was more likely due to imperfect glass. Globes and shades are often badly annealed, and crack without any apparent cause.

The New Rochelle Blackberry in Illinois.—N. H. Davis, Knox Co., Ill., gives his experience as follows: "In 1853 I obtained three or four plants from Messrs. Ellwanger & Barry, of Rochester, N. Y., which I planted in my garden. They have increased to several thousand, while I have never failed to obtain a crop since the second or third year from planting. This year, at the present writing, the prospect is more flattering than ever. I think it safe to estimate it at ten bushels. Some seasons I have gathered fruit as late as the 18th of Sept.; and from present appearances, this will be the case the present season. I like this fruit. There may be better, but I shall not part with mine until I have good evidence of the fact. My method is to cut back freely during the summer, both the main and side shoots, and in early spring remove the old canes and the dead ends from the branches. I use a pair of

large pruning shears for this purpose. The berry is not without objection, which is found in the hard core, but this may be remedied in part by letting the fruit remain on the bush until fully ripe. The above is the only objection I find to the Lawton."—Mr. D's treatment is excellent, though we should prefer to remove the old canes as soon as the fruit is off. Where the New Rochelle will endure the winter it is enormously productive. Its great fault is that it is not ripe when it is black, and when thoroughly ripe and fit to eat, it becomes of a dull color. We have a large patch which we shall root out as soon as our Kittatiny and Wilsons are in bearing.

Colorado Potato Beetle.—That which we feared has been done. The Colorado Potato Beetle has been scattered along our Eastern States. A friend in Paulding, Ohio, sent specimens in a thin pasteboard box which reached us in a smashed condition, with one remaining larva to show what it had contained. The perfect insects are doubtless distributed all along the line of the mail route. We last year requested our friends to exercise care in this matter, for fear of some such accident, and it has now happened. The beetles have escaped, and we may look for them anywhere at the East. We described and figured the insect in September, 1866. Wherever it appears, destroy it at any cost.

Coal Tar Water.—Will water strongly flavored with coal tar hurt plants? Will it keep off insects? If so, what plants will it injure and what insects will it drive away?

Three Seasons in the European Vineyards.—By William J. Flagg. Pp. 332. N. Y.: Harper & Brothers. From a cursory examination of this work we judge that the author has told pleasantly what he saw abroad, and given many excellent suggestions which will be valuable to the American grape grower. It is illustrated by engravings showing the European methods of traioing, etc. Sent by mail at the publishers' price, \$1.50.

Landscape Gardening.—The Cleveland Herald gives an account of a place which was "too poor to raise white beans," which was converted by our old friend, F. R. Elliott, into a charming spot, and a most valuable experimental fruit garden. We should not be surprised at anything F. R. E. might do, except to make his long-promised revision of his Fruit Book. Here is a man whose head, as Capt. Cuttle would say, "is the chockfuldest of knowledge," who gives out by dribbets what he ought to do in a lump. Elliott, take warning.

Club-foot in Cabbages.—"J. D. H.," Piermont, N. Y., attributes club-foot in cabbages to ants, and finds that a large pinch of salt placed around the plant prevents it. Mr. H. is mistaken as to the cause, but he may be right as to the remedy.

The Oyster-shell Bark-louse.—T. D. Plumb, Esq., a well-known horticulturist of Madison, Wis., at a recent call, gave us very good news concerning that pest to horticulturists, the Oyster-shell Bark-louse. He finds that there is some insect that preys upon the eggs. Upon examining thousands of scales he found only one with perfect eggs. We must know our insect friends as well as enemies. It is wisely ordered that no insect shall become over abundant before some other insect comes and preys upon it. The poet "builded stronger than he knew," when he wrote "Big fleas have little fleas, and these have less to bite 'em. And these fleas have lesser fleas, and so ad infinitum."

Fertilizers for a Garden.—"Iota," Onatoma, Minn. In the long run there is nothing equal to stable manure, but it often pays to use other manures, for a change. Make pondrette by deodorizing your night-soil with dry earth. Save all the hen manure and buy all you can. Ashes and plaster seldom come amiss, and ground bones are valuable. If you can obtain muck, make a compost with that and stable manure and use it in the hog-pen. For a quick stimulant there is nothing like guano. If this is not accessible, the next best thing is hen manure. Most garden crops may be greatly forwarded by the use of liquid manure, made from cow-dung. We have repeated the hot-bed story almost every spring, and it would be out of season to do so now.

Raising White Beans.—Geo. Sterin, of Indiana, wishes information on this subject. We have frequently given full directions in the *Agriculturist*, and as it is now too late to be of any use this season, we must answer at this time very briefly.—1st. It is a mistake to suppose that beans require poor land. They

should be sown on good, clean land, and have the best of culture. 2d. They should never be sown in any other way except in drills, which would never admit the use of the horse-hoe—say 2 feet or 2½ feet apart. Drop one good seed every two inches in the row, or five seeds in a hill every foot apart. If the land is rough, or there is any doubt as to the seed all growing, plant thicker, and thin out if too thick. 3d. Cultivate as soon as the rows can be distinguished, and repeat as often as once a week for the first month. If any weeds escape the cultivator, go over the crop with a hoe; and later in the season pull out by hand all weeds that are in the rows. No crop, except turnips, beets, etc., requires cleaner culture than beans, or will better repay it.

Wheat on Prairie Sod in Jasper Co., Ill.—Will it do to break prairie sod 8 inches deep in August, and put in wheat? How deep ought we to break for wheat as a first crop?

Casting the Withers.—In the June number of the *Agriculturist*, we described the method of returning the "withers," and causing them to be retained in cases of cows suffering from "prolapsus uteri" after calving. A letter from Chauncey Case, of Earlville, Ill., describes a common-sense mode of proceeding, which, in cases where it will work, (which probably would be nine cases out of ten), would be excellent. He says: "Prepare a good waxed-end, a shoemaker's awl, and a pan of new or sweet milk, blood warm. Put the cow in a clean stall and tie her; take the pan of milk and wash the protruding organ carefully; then put it back carefully to its place. Now, take hold of her hide in the small of the back, draw it up tight, put the awl through the hide, and wind the waxed-end around under both ends of the awl, tie fast, and let it remain three days; then take the awl out and let her go."

What is a Bushel of Shelled Corn?—C. H. Thompson, of Michigan, writes: "I notice Walks and Talks reckons 60 lbs. of shelled corn for a bushel. I supposed 56 lbs. was a bushel of corn in all the United States. Am I not right?"—In California and Nevada, 52 lbs. are a bushel of corn; in New York, 58 lbs.; in all the other States, 56 lbs.; in Canada and England, 60 lbs. In a large part of N. Y. State, where farmers sell corn by the bushel, custom demands 60 lbs.

Dog Eating Eggs.—H. Rigel writes, that he has "great trouble to rear dogs that won't eat eggs," and asks a cure. The writer has been able to effect a cure by the force of severe censure and disgrace, accompanied by one or two or perhaps more sound floggings. We have heard that bad cases have been cured by concealing a steel trap in the hay of a nest, after tying a hard-boiled egg upon the pan by a cord passed through it. The trap must be watched or a hen will be killed, and the dog if caught will be sure to run howling off and will lose the trap. Another cure is said to be to catch the dog in the act and have an egg, hard boiled and hot, ready to put in his mouth. The mouth must be held shut a while, and the egg must surely be very hard boiled or it will break and scald his mouth severely.

Buttercups in Permanent Meadows.—Buttercups are easily enough gotten rid of if the sward can be taken up and cultivated to hoed crops a year or two. When they gradually encroach upon the grass in permanent meadows, which it is undesirable to bring under the plow, they are a bad weed. To the inquiries of a friend, we ventured to make the following recommendation. To secure such a growth of grass as will choke out the buttercups, as barn-yard manure has been frequently and regularly applied, change the manure, and after the hay is removed, put on a good dressing of leached ashes and slaked lime. We have little doubt, however, that the weeding adz would be most efficient. We take the liberty of suggesting this tool, for we find a similar thing very efficient. It is a sort of hoe, made heavy, 2 to 2½ inches wide, and 6 inches long, of good steel, and kept sharp. If any of our readers have had good luck in clearing buttercups out of grass without plowing, we would be glad to hear about it.

Steel Plows.—A. B. Fuller, Ct., asks: "Will steel plows work well on stony land, or will they break more easily than cast-iron? and where can they be obtained?"—In our own experience with four Remington steel plows on a rather stony farm, we have never broken a steel point, or a steel mouldboard, or any part of the plow, except one of the cast-iron standards, in four years. During the same time we have broken and worn out cast-iron points by the dozen. We are now using one of the Collins cast-steel plows, and it does capital work. The Remington steel plows are made by the "Remington Agricultural Works," Utica, New York, and the Collins plows by Collins & Co., Collinsville, Connecticut.

Grindstones Run by the Foot.

M. F. Dean writes: "A grindstone may be hung to turn with the foot without friction rollers by using the common axle of the hardware stores, and running the bearings in boxes of hard wood. With a little practice, a person can do a job of grinding, and turn with the foot, in one-half of the time it will take to do the same with another to turn, and do it easier. The best sized stone for the above purpose is one weighing from one hundred to one hundred and fifty pounds, and rather thin. I look upon friction rollers as of no use, and frequently a nuisance. The bearings should be kept well oiled."—While Mr. Dean is no doubt right in the statement that a heavy, thin stone may be run by the foot with considerable ease, we still retain our high opinion of friction rollers.

Hog Cholera.

—This is a disease about which we have no authoritative opinions from veterinarians who have carefully investigated the disease and indicated the means to be used for a cure—at least, means indicated by successful practice. Our readers will find a brief basket item on the subject of cures, in the May number. Mr. W. H. Rousseau, M. D., of Iowa, sends us the following, which we hope will be thoroughly tried and reported upon. Sulphite is a powerful antiseptic, not poisonous, and largely used in human practice. He writes: "The sulphite (not sulphate) of soda will both prevent and cure hog cholera. For a preventive give ten grains of the sulphite of soda three times a day in their slop or water. For a cure give thirty grains of the sulphite three times a day. For a bad case, perhaps more should be used for the first few doses. The length of time for which the preventive should be used would depend on the cause."

The Castle Garden Labor Exchange.

—A notice of this establishment in the *Agriculturist* for July has excited so much interest, and the remarks made about the rascalities of the Greenwich Street intelligence-offices have received such complete endorsement from those who have been victimized, that we are happy to give other facts in order that the benefits of the Labor Exchange may be more widely realized. During the year 1868, which was the first year of its full operation, more than 21,000 persons were provided with places; more of these went to New York and New Jersey than to all the rest of the United States. This year the number given employment will probably exceed 40,000. During a large part of the year labor is in excess of the demand, and consequently employers have considerable choice and wages are lower. During the busy farming season, however, the demand is greatly in excess of the supply, wages are high, and even boys are quickly engaged by the farmers at full rates. The demand is most active just in the haying season. It is very desirable that the emigrants should go farther from New York than most of those do, who are hired out from the Office. Col. Cantador, the chief clerk of the Labor Exchange, and his assistants are usually able to supply laborers or mechanics to parties applying by letter, giving proper references and sending money to defray the emigrants' expenses. He has found great difficulty in sending men to their destinations, who have not valuable luggage, and now only such are sent. Some good men become perplexed and bewildered on the road, think, perhaps, they are lost, and join some party of emigrants, or accept employment of some one before they reach their journey's end. If their chests can be checked through and the check sent by mail to the employer, the men are sure to find their way. Hence it is that at hurried seasons letter orders for help are so hard to fill. It is, however, much better for the farmers or other employers of a district to club together and defray the expenses of one of their number or of some trusty man as their agent, who should come on, make selections and engagements, and accompany the laborers all the way home. An agent so appointed should bring documents to show who he is, and that the employers are respectable and responsible men. No opportunities are given to persons wishing to secure settlers upon wild lands, nor to any except those wishing to hire laborers at fair wages. The bargain with the laborer is not made by the Office, but it is settled between the man or woman and the employer, and the current rate of wages is well known by the emigrants.

Pasturing Mowing Lands.

It is the custom among average farmers to feed off the second growth of their meadows. In our opinion the hay crop of America is vastly injured, both in quality and quantity, by this practice, and the value of the fall feed is in the long run much less than the value of the extra and better hay that would result if the practice were discontinued. We are often cautioned not to feed off the aftermath so closely as to leave no protection

against frost. The fine mat of dried grass remaining on a field during the winter has but little influence against the action of a frost which penetrates sometimes to the depth of from three to five feet into the soil; no doubt, even a slight coating of grass on the surface, like a thin mulch of straw or seaweed, by preventing frequent freezing and thawing, has a beneficial effect, both by preventing the throwing out of roots in winter, and by really making the soil richer. But there is a better argument than this. If forest trees are cut off at the ground in the summer time their roots almost invariably die, or the shoots that they throw up the following season are feeble and scanty; if, on the other hand, they are allowed to grow undisturbed, until after winter sets in, and are then cut off, the shoots which grow from the stumps the next year will be much more numerous and more vigorous. If a field of turnips were mowed over early in August, the leaves being entirely removed, and were then allowed to grow undisturbed, the roots would attain a tolerable size; but if the cutting were repeated two or three times during that and the following month, very little root would be formed. These examples illustrate the well-known action of nearly all perennial and biennial vegetation during the latter part of the growing season. The plant starts in spring by using the nutritious matter stored in its root; and in the case of grass, and probably of most other plants, matter is deposited in the roots during the latter part of the season, after the full development of leaves, and in the case of seedling plants after the seed has been perfected. We may expect—indeed, practice proves—that we shall attain comparatively the same result from the late summer cutting or feeding of our meadow lands, that we would from a similar cutting of a forest or of a turnip patch. Meadow grasses start in the spring without available leaves. They form fresh leaves out of the matter stored in the roots. They then go on, and by the aid of these leaves produce more leaves, stems, and seeds. At the proper time we cut off almost the entire plant. If left to itself from this time on, it forms enough new leaves to accumulate a large amount of plant nutriment in the roots, ready for the early growth of the following season. We interfere with this process by cutting off the leaves after the first hay crop is removed; or by allowing them to be eaten off by pasturing animals, we reduce the store of nutriment, on whose abundance the abundance and early maturity of the next season's crop largely depend. We are now stating general principles, rather than precise directions; for many fields so situated as to commence their growth early in the spring, and whose soil is rich, may be mowed twice during the season, without material injury. This is a question of practice that must be decided according to the circumstances of individual cases; but as a rule it is safer not to crop too closely and it is as well demonstrated by practice as it is proven by theory, that the excessive removal of the growth of the latter part of the season is a permanent injury to the crop. In addition to this, which, in our view, is the strongest objection to the pasturing of mowing lands, the disturbance of the soil by the hoofs of animals, especially during wet weather, is a serious disadvantage. The degree to which this will operate as an objection depends on the character of the land. If a meadow produces two and a half tons of good hay in each year, that is enough to ask of it. At any ordinary agricultural price it is paying a very large interest on its cost; and the length of time during which it will continue to do so, will depend, more than on anything else, on the care with which it is treated after the main crop has been removed.

After Potato Digging.

The usual crop after potatoes is weeds, which have ample time to mature their seeds before frost comes, and to make trouble for many years afterwards. Few farmers estimate the amount of damage done to their lands by this untimely seeding. We have seen land so stocked with charlock, Canada thistles, and other weeds, that the cost of all hoed crops upon it was fully doubled. Their presence depreciates the value of the oats and barley, and even of grass. No grain or grass seed fit to be sold can be raised upon it, and even the manure made from the feeding of such crops is less valuable by reason of the foul seeds. Yet many farmers press right on stocking their land with weeds, as if they were a most valuable crop. The potatoes are dug and marketed in July, or early August, and the ground lies waste for the rest of the season. If crops are not wanted, the opportunity should be improved to destroy weeds. Plow the land as soon as the potatoes are off. After ten days go over it with a harrow. This will destroy a second crop of weeds. In ten days more go over it with a brush harrow, which will destroy a third crop. In two weeks, follow with a harrow, and so on, until the frost comes in November. A second crop may be taken from the pota-

to ground. If not in good heart, sow good superphosphate, or Peruvian guano, at the rate of 200 lbs. to the acre, on the old rows. Go over the rows once with a cultivator. Sow turnip seed sparingly upon the fresh soil, and put them in with a light one-horse harrow or hush. When the turnips are up, cultivate between the rows, and keep these spaces free from weeds. The turnips will soon shade the ground, and prevent the growth of weeds in the rows. There are frequently three months or more between the early potato harvest and the closing of the ground, and in this time a fine crop of white turnips may be grown at a cost of less than six cents a bushel. They are excellent for young cattle, and will assist materially in making beef and mutton. Sometimes the potatoes come off early enough for buckwheat or the winter grains. If manure is judiciously used, two crops in a season may be taken from the soil.

Sending Honey to Market.

BY M. QUINCY.

"G., Brownsville, Minnesota, writes: "I expect to have a large quantity of honey to sell this year. It is quite a bee country along the Mississippi, and the market, in places, becomes glutted sometimes. Can I send my surplus by rail, two hundred miles, without having it smashed? What kind of boxes are best for transportation by rail?"—The kind of boxes will make but little difference. No box ever invented will save it from being "smashed" unless more care is given to the handling than we have ever been able to secure. I have had some experience in sending honey to market by canal, and a very little by rail. The breaking does not occur on the car or boat, but in handling. It was long before I could feel any confidence that it would go safe, even by water, but now I feel quite secure. One freighting firm in this vicinity carried over \$60,000 worth of box honey to the New York market last fall, and not a pound was broken on the way. I formerly packed the glass boxes, containing honey, in close, firm cases, marked, "HANDLE WITH CARE," "THIS SIDE UP," etc., but invariably, the first thing seen on its arrival in market was a stream of honey from the cases, and every box reduced one-half in value. It was then suggested that, as every man that handled produce would comprehend that glass could be broken, though the thinnest window panes will stand ten times more jarring without breaking than honey-comb, that if they could see the glass, they might take a little care. It worked like a charm. I made cases, holding about 50 lbs., 15 inches by 30, and 6 inches deep, as follows: on the longest sides I nailed narrow strips like lath, bottom and top, leaving an open space where the glass sides of the boxes could be plainly seen when placed inside. I nailed handles on each end, and found these simple devices more effectual in securing gentle handling than any outside care. The men are sure there is glass there, for they can see it. I have sent hives of bees weighing eighty pounds full of heavy sheets of comb, a thousand miles by rail, safely, by putting springs under the bottom, and so fixing the top that nothing could be set upon it. I think the above-described cases, with a little alteration, can be sent with equal safety. Give two inches more in depth, and make springs, say of the staves of an old flour barrel. Put three of these inside, on the bottom, the middle one bending in an opposite direction from the other two; or springs may be made of coiled wire, and one placed in each corner. On these springs lay a second bottom, and on this set the boxes. Label the top of each case "This Side Up," "Handle with Care," in large letters; and if it is kept and handled so, it will be all right. These carriers should be made to pay all damages. A few lessons are needed. It would be best to make a special contract with the transportation agents. By having the springs inside of each case, they can be piled without danger, one above another, which could not be done if they were on the outside.

Harvesting Clover Seed.

A Maryland subscriber of the *Agriculturist* inquires as to the best method of harvesting clover seed. We may not be able to tell him the best method, for what is best in some circumstances may not be best in others. But we can tell him the method that we ourselves adopt. If there is a large growth of clover, it should be harvested with reference to its value for hay as well as for seed. In this case we cut it as soon as the earlier blossoms are dead ripe, and while the later blossoms are quite green and the stalks and leaves full of sap. Such a crop will not yield much seed, but if carefully cured, the hay, after the seed is thrashed out, makes valuable fodder. We cut it with a mowing machine and rake it into windrows, turning them as often as necessary, and getting the partially cured hay into small, well-formed cocks as soon as

possible. The cocks should be turned over occasionally and opened if necessary. The crop should not be drawn in until it is thoroughly cured. The field should be carefully raked with a steel rake, and it is well to do this as soon as the crop is drawn into windrows—running the rake lengthwise between the windrows.

When the crop is of medium growth the neatest way of harvesting it is to cut it with a combined mowing machine, with the platform of the reaper attached. A man rides on the machine and gathers the crop as cut, on the platform, until he has as much as it will carry, and then he throws it off with the rake. These bunches are turned over occasionally until cured. They are then loaded on to a wagon and the land on which they laid is raked with a hand rake. If cured in cocks the hay would be more valuable. Ordinarily the bunches are allowed to lie exposed to the rain and sun, and in this case the fodder is spoiled. When the crop is very light, it cannot be cut in the manner described above, for the reason that the platform of the reaper will not allow the cutter-bar to run close enough to the ground. Last year our crop of clover, owing to the drought, was very short,—not more than six inches high; but it was well filled and we thought it worth the trouble of gathering. This we succeeded in doing with little expense as follows:

We had a Wood's Mower, on the finger-bar of which there are three cast-iron clamps for keeping the cutter-bar in place. We got two pieces of sheet-iron, about four feet long, and had them riveted together. By loosening the bolts of the three clamps on the finger-bar we could slip the iron under them, when they were screwed down tight again, and this held our extempore sheet-iron platform in its place. We bent it up over the grass divider and a little on the opposite side, and put a wire from the hind corner to the frame of the machine, to steady it. A man followed the machine with a rake and kept the clover on this sheet-iron platform as it ran on the ground, and when he had got a good-sized bunch pulled it off. In this way we cut over forty acres of clover seed that it would otherwise have been difficult or impossible to gather. If there is no intention of saving the clover straw for fodder there is no necessity of paying much attention to curing the crop. The oftener it is thoroughly wet and dried again, the easier it will thrash. It is desirable to have it thoroughly dry when drawn in. It should be put in the barn, as clover seed is one of the worst crops to secure from rain in a stack. We usually thrash in winter, selecting, if possible, dry, frosty weather. We have excellent machines for thrashing and hulling it, and the owners furnish four horses and three or four men, and thrash and clean the seed all ready for market for 75 cents to \$1 a bushel. The yield varies from one bushel to seven bushels per acre, three bushels being an average crop. Now that we can do all the work with machinery it is one of the most profitable crops we raise, in proportion to its cost.

Roads and Road-making.—No. 2.

We discussed the subject of road-making in the July *Agriculturist*, taking the ground that the surest way to have good country roads is to break up altogether the present system of having them worked by districts, and by the inhabitants. They may be worked by contract, or by a good practical man who has some knowledge of surveying and engineering, and who may be employed upon a good salary by the town, furnished labor, teams, tools, etc. This plan works well.

Next to having good roads it is desirable to have pleasant ones. There is certainly great pleasure to most people in the mere driving along upon a fine, hard, well-graded road, free from stones, wet spots, and sandy stretches. But to almost every one the pleasure is greatly enhanced by the grass and brooks, the woods and trees of all sorts along the highway, to say nothing of the views near at hand, nor of the distant prospects. Country roads are not used for pleasure-riding a great deal, except in the neighborhood of large towns; nevertheless, though ever so much inclined not to sacrifice utility to beauty, we must mildly protest against these long, straight stretches of highway, which always are as monotonous and dreary as the character of the country will allow. It requires but a very slight accommodation of the road to the natural levels of even as flat a piece of

prairie as one can readily find, to give just crooks enough to a road, on the whole very direct, to relieve the tediousness of travel for business or pleasure upon a perfectly straight road. Few are aware how very slightly the distance is increased, and how much pleasanter the road becomes, for having just turns enough in it to prevent more than perhaps one-eighth of a mile along the road being in view at any one time. In the distant country, where every thing bends to utility, we do not wonder that generation after generation lay out the roads from point to point as direct as possible; but in suburban districts, where the object of opening new roads is to develop building sites, and to attract dwellers in the town to the country, at least for the summer, one of the great attractions being the ability to take pleasure and relaxation in driving, it seems inexplicable that people should not be contented unless they lay out new roads without a bend in them for miles and miles. Wherever such roads have been long in use, it is found that pleasure parties always shun them, unless the choice of the direction be left with the driver. The shady, crooked roads among old farm-houses, and those through wooded swales and shady dells, are sought out, and here one meets the stylish equipages of the rich, the old family one-horse barouche with its load of happy children, well mounted riding parties, and all those who enjoy the country for its own sake, and who drive or ride for some other purpose than showing off fast horses.

We object also to very broad roads. Every road should be broad enough for three wagons to roll abreast, but no road should be broader than it can be well taken care of. What is there beautiful or useful in a Westchester Co. "Boulevard" (the fashionable name now), 100 feet wide, with a *winding* wagon track in the middle, or near it, and a wilderness of black-berry briars and poke-weed for 15 or 20 feet on each side? A country road, 40 feet wide, is wide enough for *use*; if 50 feet wide, the road must be well looked after by adjoining proprietors, or it will be lined with a thicket of underbrush and a nursery of weeds. A road 60 feet wide is very handsome, if well cared for, and it appears generous and liberal; but it is so much of a tax to maintain it in good order that it is a risky thing to lay one out, except in very thickly settled neighborhoods.

Sefton Pigs—In-and-in Breeding.

In a previous number we have alluded to the Sefton swine, and our own experience with them. We have now another litter to report, and this closes the account. The total result in this second generation was one small pig (with a defective lip and an undeveloped jaw)—which lived only a few days. The probability is that our poor achievement is in no way creditable to the Seftons as a *breed*,—only an illustration of the ill effects of close-breeding. So far as we can learn, all the Seftons in the country are descended from animals (possibly from a single pair) imported from England by a single person. The original stock is reported to be of great excellence, producing large litters of fine pigs, and there can be no doubt (this fact being admitted) that the ill success of recent experiments is due only to the want of fresh blood. This idea is partly demonstrated by the fact that our Sefton boar, although evidently affected in both size and form by the relationship of his progenitor, gets remarkably fine pigs when crossed with sows of other breeds.

Were it possible to procure a fresh infusion of blood by importation from England, we should not hesitate to recommend the breeding of these swine. It is said (but the story has an unreliable look), that the Earl of Sefton, who originated the breed, desiring to keep it entirely to himself, never allows the animals to leave his place alive, and that he only once "suspended the rules" and gave a pair of pigs to an American ship-master. From this pair, our stock is descended. If others can be obtained from the fountain-head, it is very likely that a better breed than any we now have will be introduced, but if we are to look only to the stock now in the country, it is not probable that they can be brought up to the standard of the Chester Whites, which is thus far The Great American Pig.

Tim Bunker on Farmers' Losses and Trials.

"There's nothing like having both sides of a question," said Uncle Jotham Sparrowgrass, as he struck his old cane upon the gravel, and looked Parson Spooner straight in the eye.

"You see, there was Ned Woodhull, over on the Island, more than thirty years ago, who edited the Peconic Eagle, and wrote poetry, in prose and verse, on the blessings of rural life. The fellow had never spent a night in the city, and never seen any thing bigger than Sag Harbor in his life. He'd never been out of sight of cow pastures, or out of the smell of Bony-fish, and what did he know about the purple and fine linen they have in the city? To hear Ned talk, when he got into one of his highfalutin strains, you'd think the kingdom had come, and the new heavens was set up on the east end of Long Island. There was no end to the notes of his bugle on the pinks and roses, the violets and posies, but I did not see many of them in the farmers' yards, and I did smell Bony-fish six months in the year, and sometimes there was 'most too much of a good thing."

"Good thing!" echoed Jake Frink, "I should like to know what good thing any body with two eyes in his head can see about farming. I'd sell out to-morrow if I had a chance, and there was anything else a fellow could do. Ye see, it has been an uncommon hard season so far. Ye see, tew cows slunk their calves, and the only wonder was why the other cows didn't. Then Aunt Polly is generally great on turkeys, but the only great thing in the poultry line this year was the slaughter the foxes made among them. They killed two turkeys and their young ones and six geese in one night. The skunks got at the setting ducks' nests, and broke them up, and the weasels pitched into the chickens right and left. Polly was down in the mouth, depend on't. No, Uncle Jotham, there's no music in farming any way you can fix it. If I had a hand-organ and a monkey I'd strike out to-morrow, and du snthin'."

"I'd give tew cents to hear you play," said Tucker.

"The jubilee music wouldn't be a touch to it," said Jones, with his broadest grin.

"I have had dreadful luck with my pigs this spring," said Seth Twiggs, with a puff of smoke as blue as his face. "Ye see, I bought a big sow with pig, and give fifty dollars, thinkin' I'd make a spec, which was an easy calculation with pigs at ten dollars apiece. I calculated on thirteen pigs. She had 'em, but the beast lay on five, and eat up tew, and there's only six left, which takes off the profits."

"How about those three-dollars-a-pound po-

atoes?" inquired Parson Spooner of Deacon Smith.

"They produced wonderfully," said the Deacon. "I sprouted them five times, and must have got five hundred fold. But they more than half rotted, I suppose because they happened to be worth forty dollars a barrel this spring. But I saved my bacon."

"As you always do," added Jones. "I believe things would grow on a bare rock if you planted 'em. It's jest some folks' luck."

"I don't think there is a great deal of luck about farming," said the Deacon. "If you know how, and use the means, the result is about as certain as anything under the sun. You may calculate on thirty, sixty, and a hundred fold with entire confidence, take it one year with another. I had no business to expect five hundred fold, and I suppose it would not have been a good thing for me, or for the public. I might have been sot up too much with my success, and then, if every body produced five hundred fold, the market for potatoes would be a little overstocked, and prices would be so low that it would not pay to plant them."

"It hain't paid this year, any how," said Jake Frink. "Last spring I sold potatoes for tew dollars a bushel, and was mighty sorry I hadn't hung on to the whole crop. This spring I kept every thing over, and was mighty glad to git rid of the last on 'em, down to Shadtown, for thirty cents a bushel. I might have sold every one of 'em for eighty cents a bushel last fall. There's no calculation on any thing in farming. I didn't plant over an acre of potatoes this spring. It don't pay."

"That is where you made a blunder," the Deacon replied. "Any man, who has studied the markets, might have known that when potatoes were two dollars a bushel, everybody would rush into them. There hasn't been so many potatoes planted in years as last season. The crop was uncommonly sound, and every body was loth to sell at paying prices last fall. This spring, everybody must sell for what they can get, and that is as little as ten cents in some of the great potato counties. Everybody is disgusted with potatoes, and goes into something else. I keep straight on planting potatoes, calculating that for any four years they will pay about as well as any farm crop. I have put in eighteen acres this year, and I calculate that next spring my turn will come to make some money. If it don't, my cattle will have plenty of potatoes to eat. A farmer can do a good deal worse business than to raise potatoes for his cattle, especially when they turn out three hundred bushels to the acre."

"There is some sense in that," said Jake. "If a feller could only git the three hundred, or even two hundred. But, ye see, jest as sure as I git the promise of a big crop, the rot strikes on, and the potatoes turn up missing."

"Ah!" said the Deacon, "there is where you make another mistake. You don't plant the right sort. You plant the Mercer, and other old sorts, because you have always planted them, and you know they rot more or less every year. The only question is how much you can save. I plant the Harrison, the Gleason, and other new sorts, and with them rotting is the exception, and sound potatoes the rule. I didn't lose ten bushels in a crop of a thousand last year. Joe Blake, my next neighbor, in an adjoining field, lost half his crop of Peach-blows, and, like a fool, he has planted Peach-blows again this spring. I profit by the folly of such people. The more they stick to the old sorts, the more certain they make it that we

cannot rely upon them. A few give out every year, and try the seedlings of Mr. Goodrich and other new kinds. The price of potatoes is kept up by the persistence of farmers in planting the old kinds, that will rot in spite of all you can do for them. Nothing could better illustrate the doggedness of farmers in following the ruts than the fact that the Mercer potato is still planted after twenty-five years of rotting."

"Not quite so fast, Deacon," said Seth Twiggs, puffing away at the stump of his pipe. "I tried some of your Early Goodrich last year, and they rotted like pizen."

"Well, they ought to have rotted," the Deacon curtly replied. "You planted them in a swale, you didn't hoe them but once, and by August they caved in under the double pressure of weeds and water. Any sensible potato would have backed out under such treatment. I give mine well-drained land and thorough cultivation, and did not see a bad potato."

"Then your doctrine is," inquired Mr. Spooner, "that if a farmer studies his business, and takes care of it, he won't have any losses?"

"Not exactly that," said the Deacon. "But if he does this, he will have fewer losses than in any other calling. Most of our losses and trials are due to ignorance and carelessness."

"I should like to know," said Jake Frink, indignantly, "how I could have prevented the foxes from killing my turkeys."

"That is just the question I'd like to answer," said the Deacon. "You and a few other mean farmers have voted for years against a bounty on foxes, and have carried your point. As a consequence, these animals have increased, and you have lost some of your poultry, worth probably ten times as much as you would have paid in taxes. I am rather resigned under your losses. I think you will vote for a bounty next spring. Then you have been suffering the bushes to invade your farm, and a thicket has grown up along the brook, within ten rods of your house, making as nice a shelter for foxes as could be desired. You can't blame them, if they accept your invitation, walk into your nice little jungle, and snap up your sitting turkeys. If you clear up your brush, and provide coops for your turkeys near the house, the foxes will not trouble you, especially if you keep on the bounty, and kill them off. You can make as clean work with the foxes as has been made with bears and catamounts. Man was made to subdue the earth and wild beasts. If he don't do it, something is the matter with his brains."

The Deacon is as sound as a nut. The fact is, we are to blame for most of our losses; and blameworthy or not, we do not have so many troubles as other people. City folks, who turn farmers, are apt to get the key note pitched a little too high, but they soon learn that the best hen will not average an egg a day, and the best turkey will not always lay twenty eggs, hatch them, and raise the young ones. People sometimes lose what they never had.

Hookertown, Conn., } Yours to Command,
July 15th, 1869. } TIMOTHY BUNKER, Esq.

About the Rotation of Crops.

Frequent attempts are made to lay down specific rules for the rotation of the crops of a farm; but there are so many circumstances which render it necessary to deviate from any fixed directions, that it seems to us much more useful to state the principles upon which the necessity for rotation is based, than to attempt to prescribe definite rules. There are various objects to be attained by means of a rotation.

The most important of these are the improvement of the condition of the soil and the proper adjustment of the demand for labor. All other matters are incidental, although, of course, the question of the sale of crops, that is, the production of that which will yield the most money without injury to the land, is of the utmost consequence.

It is perfectly well known by all farmers who know anything, that the raising of the same crop—unless, indeed, it be permanent pasture grasses—for many successive years on the same land, gradually injures its quality. Not only are certain elements of fertility that the soil contains, removed out of all proportion to the quantity of other available elements that the crop requires; but, as each crop is attended by its peculiar weeds and peculiar insects, these incidental drawbacks to the success of our operations are fostered in increasing degree in proportion to the length of time during which a single crop is grown. Therefore, we should constantly aim to so alternate our cropping, that, while this year's crop may make an excessive demand on the phosphoric acid of the soil, that of the next year may require less of this ingredient, and more of some other; and so that the weeds that are induced by the growth of this year's crop may, by the more thorough cultivation of the next year, be exterminated. It will be found in practice that the greater the number of different crops that enter into the rotation, provided they are all such as can be grown with success and disposed of with certainty, the better will be the ultimate result;—and especially should clover or some other deep-rooting plant find a prominent place in the shift, for these plants obtain a large amount of nutritive matter from the subsoil, which on their decomposition they yield to the surface soil, while the decay of their deeper reaching roots opens inviting channels for the descent of the roots of more delicate plants.

It is not always—indeed, not generally,—possible to adopt such a system of rotation as shall develop the greatest possible productive capacity of the land, even in those cases where the supply of manure is ample for the purpose. The reason for this is that some of the more productive crops require a large amount of manual labor, and also that the chief labor required by two entirely different crops may fall due on the same day. It is necessary, therefore, to take into consideration the amount of labor that a given area of any crop will require at any particular period; and matters should be adjusted, so far as possible (due allowance being made for bad weather), in such a way that, from the first opening of spring, until the final setting in of winter, the regular force of the farm may be constantly employed; and also so that the requirement for extra labor, that necessarily attends all systematic farming during certain seasons, may be surely met by the supply of transient men within reach. For instance, the raising of roots and cabbages, which are highly important, not only as yielding a very valuable addition to the stock of winter food, but as greatly improving the soil through their high cultivation and the rich manuring that they need, requires that a very large amount of hand-labor be done at the precise time when the getting in of hay calls for every moment's labor of the regular farm force; and, consequently, the extent of these crops must be limited almost exactly by the amount of help that the neighborhood affords,—due account being taken of the services of women and children, who, for this work, are even better than men.

Our Small Herons.

We present pictures this month of two striking species—the Green Heron, (fig. 1.) *Ardea virescens*, of Linnæus, now called *Butorides virescens*, as named by Bonaparte, and (fig. 2) the Least Bittern, formerly *Ardea*, now *Ardetta exilis*. They are both waders and spearmen, taking their prey alive by impaling it upon their long, sharp bills. The former is familiar to every farmer's boy, and is sometimes called "fly-up-the-creek," but more commonly "poke," from its awkward flight, and more awkward position when standing, especially if its perch is not stable. The bird has, however, points of great beauty in its plumage, in which bright deep green, purplish red, brown, and bluish gray are combined. On some parts the colors are changeable, like some silk stuffs. The crest is permanently green, and erectile, the feathers of the back green or bluish gray, according to the direction from which they are viewed; the neck is purplish red, the throat white, with dark brown spots; the wings are olive green, the feathers being laced with white, and the under parts are dusky brown, inclining to ash color. The upper part of the bill is black, the lower mandible chiefly yellow, and the legs are yellow. The Green Heron is common in summer in all parts of the United States. In winter the scattered ones move southward, and remain in the Gulf States. It is common on the margins of stagnant pools and salt marshes, and along upland streams. The nests are near the margins of ponds, sometimes low, at other times built in high positions. It usually lays four eggs, and the young do not gain their full plumage before the second season. The food of this heron, like most of its con-

geners, is such animals as it can procure by wading along the margins of streams and pools, and in marshes; namely, frogs, field-mice and shrews, insects, fish, shell-fish, tadpoles, etc. Its habits are not so much nocturnal as those of most other herons, but it feeds more or less all day, being most active about dusk. The flesh is never eaten at the North, so far as we are aware, but it is esteemed at the South, and the birds are occasionally found with other game in the markets of New Orleans and other Southern cities. Common specimens are about 15 or 16 inches long.

The Least Bittern, (fig. 2.) *Ardetta exilis* of Gray, is the smallest of the Herons. (Why it is called Bittern it would be difficult to say.) This

pretty little species is by no means so frequently met with as the former, except at the South. It is a constant resident of Florida, extending southward in winter, and northward in sum-

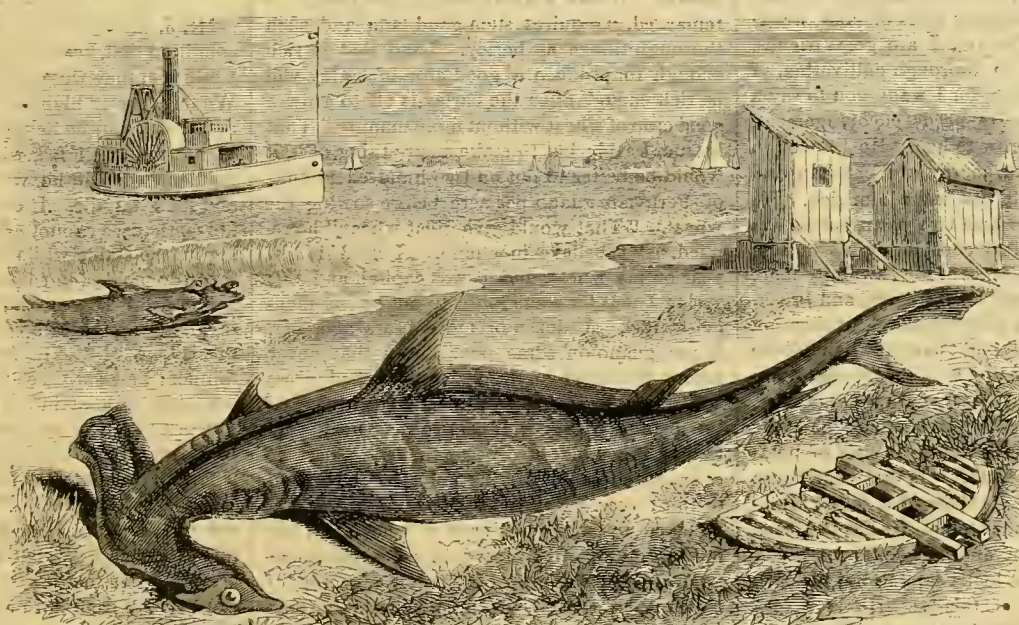
mer, its plumage being more greenish black; the sides of the head and back of the neck are brownish red, almost a wine color, shading into light chestnut. The wing coverts are of a similar color, the secondaries tipped with chestnut red, and the flight feathers purplish gray. The tail is short and rounded; the wings are also short, broad, and rounded. Audubon mentions an interesting peculiarity of this bird, namely, its ability to narrow its body to pass through close spaces. He placed two books an inch and a half and afterwards an inch apart, and found that, though their bodies measured 2 1/2 inches across, they easily walked through the narrowest space. The size of the Least Bittern is given as 12 to 13 1/2 inches, total length from tip of bill to tail; measured to the tips of the claws, about 16 inches; while the weight is from 3 1/2 to 4 1/4 ounces, the males being larger, heavier, as well as more brilliantly colored, than the females.



GREEN HERON AND LEAST BITTERN.

mer, being found from Maine to the head waters of the Missouri. Its habits, food, and places of resort, are quite similar to those of the Green

more quickly and easily from their one-sided tails. The Hammer-head Shark is common to both Europe and America.



HAMMER-HEAD SHARK.—(Zygona malleus.)

Heron. The colors are less brilliant, but beautiful; the crest, back, and tail, are glossy green-

It is, when of full size, 11 or 12 feet long, the body being of a grayish color above, and whitish below. The head is nearly black, flat, exceedingly broad and truncated, reminding one of a mallet or double-headed hammer, and the eyes are at the extreme outer ends. The skin is tough, the flesh leathery, and unfit to eat. The liver yields a good deal of valuable oil. This fish is held in dread by the fishermen of our coast on account of its ferocity, and it is one of those sharks which occasionally attack surf-bathers who swim out, far from shore. Its food is principally flatfish, skates, and other bottom fish.

Walks and Talks on the Farm—No. 68.

John Johnston has been to see me. He is nearly in his eightieth year, but is as enthusiastic about farming as ever. "I never expected to go so far from home again," he said, "but I wanted to see your farm, and how you are getting along." Passing a lowland farm, that produces little but weeds, rushes, and coarse grass, on the banks of a creek on our way from the station, and on my telling him it belonged to a firm in New York who had a \$70-an-acre mortgage on it, that they foreclosed and bought in the farm, and that they would now probably be glad to take \$35 an acre for it, he exclaimed, "If I was ten years younger, I would like to buy it. It would make grand meadow land. I could make it cut three tons of hay to the acre, and there is nothing that pays better than hay." His eyes brightened as he pointed out where he would put in the drains. "Such land," he said, "does not need many drains. An underdrain will dry this light, alluvial soil on each side a far greater distance than on clayey upland like mine." "The people here think it is too flat to drain," I said, but his practiced eye soon detected this error. "See how fast the water runs in places," he exclaimed; "there is plenty of fall if they would only clean out the creek." And he is right; for, a short time ago, the boys put a couple of planks across the creek, and dammed it up, so that they could go in swimming; and I noticed that, though the dam was two feet high, it did not set the water back for more than fifteen rods, showing that there was two feet fall in this distance. If the creek was cleaned out so that the water ran on a dead level for thirty or forty rods, the creek would then be four or five feet deep, and this would enable us to put in the underdrains on each side as deep as is necessary for the most perfect drainage. And where this is done, there is no richer or more productive land. One man, who has a small farm a little higher up on this same creek, cut some surface ditches, about two feet deep, and threw the black muck from the ditches on to the land, and he has made himself rich by raising onions, carrots, etc.

"Here, on the edge of the swamp, lives an energetic Hollander, the happy father of a dozen children. He rents ninety acres of land, working it on shares. He and I are great friends, for we both believe in thorough cultivation. I wish we could see him, for I want you to say a good word to him. He needs encouragement, for he has a hard row to hoe. He is poor in everything but health, energy, and children, and these, I tell him, will yet make him rich. He has only been on the farm two years, but he has accomplished wonders considering his means. There were a dozen acres of low, swampy land, covered with decayed logs, stumps, and brush. The owner told him if he would clear them off and put in a crop, he might have all the produce the first season. He did so, cutting one or two surface ditches, and planting corn and potatoes. He cultivated them thoroughly, and had the best corn and by far the heaviest yield of potatoes in the neighborhood." "Is that your house yonder, on the right?" "No, that is the 'Deacon's.'" His farm joins mine. He has just been building a new barn, and this indicates better farming. His wheat looks capital, but his oats, like mine, are full of thistles. He is a very shrewd, observing, intelligent man; knows how to give capital advice on all subjects, but does not always follow it himself. He believes in draining, but his land is innocent of tiles. He

was offered \$140 an acre for his farm, and thinks it will pay the interest on more, while I am sure that \$20 an acre, judiciously spent in draining, would double its productiveness, and quadruple the profits; and if it was any other farm than his own, the Deacon would persuade the owner to put in the ditches. He is a first-rate neighbor, but (this is in strict confidence, you know) he is a little bit of an old fogey. I persuaded Mr. Beman, whose farm we have just passed, to buy a steel plow this spring, and he pronounces it the best plow he ever saw; but the Deacon met me the other day, and said, "I have just been looking at your corn and Mr. Beman's, and I have come to the unanimous opinion that those steel plows bring in the weeds!" I told him that was an old story. It was what the English farmers, who had been in the habit of using wooden plows, said of the iron ones. And though I laughed at the idea at the time, it is possible there is some truth in it. The steel plows pulverize and mellow the soil more perfectly than the iron ones—just as the iron ones did the same thing better than the wooden ones—and, consequently, any seeds of weeds that were lying dormant among the clogs would be more likely to germinate. I have known subsoiling and deep plowing to "bring in" thistles and wild mustard by the million.

All this time, Mr. Johnston, who was tired by his journey, said little. Like all sensible and agreeable men, he is a good listener. But after dinner we got him talking about his own farm experience—and what a rich experience it has been! When he made his first purchase, "You will starve on that land," the neighbors said. He drew out a large quantity of manure that had been accumulating for years, and put it on to a field he was about to sow to barley. "You are throwing away your time and money," was all the encouragement he received; and what was worse than all, the barley itself seemed to confirm their opinion. *It was a miserable crop!* Poor Johnston! It must have been a bitter pill to swallow. But his faith was strong, and he kept busily at work. He mowed and got together what little barley there was, and plowed the land twice, harrowed it thoroughly, and then sowed wheat. And this time he got his reward. It was a great crop. "No crop," he remarked, "requires such good land and such thorough tillage as barley. Land that is rich enough to produce a good crop of barley will be rich enough after the barley is off to grow a good crop of wheat without more manure." That is true, I said; but to make a sure thing of it, it would be better to put on two hundred pounds of Peruvian guano per acre before sowing the wheat. "That would give great wheat," he replied. "I believe in guano. I used it last year on my wheat, and it was capital, and this spring I sent for some more to put on my mangel-wurzel. A dozen or more years ago, Mr. S. put guano on some poor knolls that never before produced anything, and he had great wheat, and to this day you can see the effect of the guano." I can well believe that, I said; although it is undoubtedly true that not a particle of manure remained in the soil after the second or third year. Nearly all the ammonia would be taken up by the first crop of wheat, and the following crop of clover would use up the phosphates. But he probably had a big crop of clover, the roots of which, and probably some of the clover, would be plowed in for manure, and thus the land would grow good crops long after the guano had disappeared. And the same is true of plaster, or manure of any kind,

or of summer-fallowing, or of anything that we once do to enrich the land. It gives us good clover, and if the land is properly managed afterwards, we never altogether lose the benefit. A good start is half the race. "Yes," he replied, "the clover on these knolls where the guano was put is always so heavy that it lodges."

The next morning, after having been to the barn-yard, where the men were milking the cows, he asked, "What makes your cows so thin? You could not have wintered them well." This remark "took me down" considerably. I rather prided myself on feeding the cows so well in winter. And I have been for several weeks feeding them steamed potatoes, and a little corn meal; and besides this, their pasture is capital. In fact, I have been a little afraid of getting my cows too fat. I feed higher than anybody else in this neighborhood, and then to be told that the cows are thin! Well, if Mr. J. says so, all right. I will feed higher. I believe in supplying all the food a cow can turn into butter. And I believe, too, in making cows fat in winter, being satisfied that, with a good cow, we get all the fat back again in the form of butter during the summer.

Mr. Johnston's cows are grade Short-horns, and are very fat, but they give a large quantity of milk. He says "there is nothing like Durhams." He has just sold a two-year-old heifer to the butcher for \$116. She weighed 1,300 lbs. or so. Except for the last few months, she had nothing but grass and hay. But then his grass is of the best quality. He believes, as I do, that on dry land, the more you cultivate it, and the more manure you use, the more nutritious will be the grass. Few understand what an immense advantage this is. Mr. J. has to milk his cows three times a day, and gets a painful each time; and the cows have nothing but hay and grass, winter and summer. But the truth is, that it would take two or three quarts of corn meal to make twenty-five pounds of ordinary hay equal to that which Mr. J. gets from his thoroughly underdrained, clean, and richly manured land. Those of us who are trying to improve our farms should take encouragement. The advantages to be gained are greater in every way than most of us understand.

Mr. J. thought my horses were in such high condition that I could not work them very hard. I told him they were worked steadily every day. We feed pretty high, and it is one of my rules never, if it can be helped, to let a horse lie idle. A horse, if well fed, will do better if worked regularly than if he works hard occasionally, and then lies idle. It costs so much to keep a horse, that we cannot afford to have him standing in the stable while we are hoeing. Better try to do more of our hoeing with the cultivator.

But "fat horses and thin cows," you will say, does not indicate very good farming. And this is true. But I do not want my horses any thinner; and I will see that my cows, after this, are fatter, at least in the spring. A cow ought to work "as hard as a horse," and should be as well fed. That is to say, we keep horses to labor, and cows to produce milk, and the source of both is the food. Where horses and cows are cheap, it may pay to keep them on a low-diet of cheap food; but where they are high, it is a great loss to allow their digestive powers to run to waste from not providing all the material that the stomach can turn into blood, which is the primary source of milk, as well as flesh. We are all of us rather inclined to feed our horses better than we do our cows, and it is

a great mistake. We should not feed our horses less, but our cows more than is generally done.

You think Mr. J. was rather hard on me. Not at all. He simply detected my weak points. Would you have fared any better? Do you work your horses more constantly, or feed your cows more generously? "In an experience of forty years," said he, "I have never met with but two men who could be trusted to take care of fattening sheep, and one of these was a thief! Where there is one man who is fit to come near a cow or sheep, there are a hundred who can plow, and mow, and do all kinds of farm work." This is undoubtedly true. Neglect a fattening animal for a single day, and you lose all your feed for a week. A farmer must give his stock his personal attention, or he cannot hope for success. He need not necessarily do all the work himself, but he must, at any rate, see that it is done, and done promptly and regularly. And he must be able to detect, at a glance, any slight change in an animal, and if it will not eat enough of one kind of food, try something else. Mayhew says that a horse has such a great desire to do anything that a kind master wishes, that he can soon persuade him to eat bitter aloes, while I have known men who could not induce a cow to eat steamed potatoes and corn meal, or a sheep to eat oil-cake. Such men may be allowed to pile manure in the barn-yard while the stock is in the field, but their harsh voices should never reach the ears of a gentle cow or a timid sheep.

My remarks in regard to plowing with lines round the shoulder have brought me letters by the bushel. And nearly all the writers condemn the practice, and think I must reside in a benighted region. Throughout Western New York it is the general practice. I know of but one man who does not adopt it. He uses a jockey stick between the horses, and two single rope lines, which he holds in his hands, or lets them hang on the handles of the plow. He guides his horses by "haw" and "gee," and seldom needs to use the lines, except to touch up the horses occasionally.

One of the editors of the *Agriculturist* thinks I have got "fall-fallowing and barley growing on the brain." He is right. And I will do all I can to communicate the complaint to others. Not that I wish to induce any one to raise barley. Such is not my desire. But I do want farmers to try fall-fallowing for any or all spring crops they propose to raise. I am satisfied that, if generally adopted, the practice would add millions of dollars to the profits of American farmers. Of course it is not adapted to all soils and all situations. In the neighborhood of our large cities, where land is too valuable to be allowed to remain idle for three or four months, we must grow crops and clean the land at the same time. And on light sandy soils, generally, fall-fallowing may not be necessary. By the constant use of the cultivator among corn, potatoes, beans, and other hoed crops, we can keep such land perfectly clean. And this is all that is needed, except manure, to produce good crops. But, away from the cities, and on the heavier class of soils, such as "clay loam," "calcareous loam," and even "sandy loam," or, in short, on any soil that contains latent plant-food, fall-fallowing will prove exceedingly useful. I do not mean fall-plowing merely. I mean much more than this. Plow the land in July or August, and cultivate and harrow it thoroughly, to cause the weeds to germinate.

Then cross-plow it, and repeat the harrowings and cultivations until the surface-soil, for five or six inches deep, is as mellow as a garden. Then plow it again, deep and well, and let it lie up rough for the frosts of winter to disintegrate and mellow the inch or two of subsoil last thrown up. Then in the spring sow what you will,—wheat, barley, or oats; or, better still, if the weeds, root, branch, and seed, are not all killed, plant corn, potatoes, or beans, and cultivate thoroughly, and this will soon give us clean farms, rich land, and large profits.

Pigs are very scarce this summer, and farmers are anticipating very high prices for pork next winter. My own opinion is, that those who fat early will make the most money. Corn is low, and it will pay well to convert it into pork at present prices. In August and September, if the pigs have the run of a good pasture, I have no doubt that three or four bushels of corn will make one hundred pounds of pork. Ordinarily, when pigs are shut up to fatten, it requires seven or eight bushels of corn to make one hundred pounds of pork. In the summer, with a good pasture, the pigs get enough grass to keep them growing, and all the corn they receive is converted into pork; whereas, when they are shut up to fatten, probably more than half the corn they eat is needed to sustain the vital functions, and all the growth and fat are derived from the corn eaten over and above this amount. When pigs are scarce, and corn cheap, as at present, nothing can be more unwise than to feed them nothing but the slops and milk from the house, and grass. Let them have a quart or so of corn a day besides, and they will grow as fast again. There is no cheaper way of making pork. No half-fat hogs should be sent to market this year, and now is the time to prevent it. If a farmer has no corn, let him buy it. It will pay, as it has rarely paid before.

Agricultural writers are inclined to run to extremes. Farmers often cure their hay too much, and to guard against this mistake, some writers urge us to put it into the barn before it is cured half as much as it ought to be. I have found, to my cost, that it is not safe to follow their recommendations. Better dry it too much than not dry it enough. And so in cutting grain. There is undoubtedly a loss in letting it get dead ripe. But there is a still greater loss in cutting it before the grain becomes firm.

Steam thrashing machines are destined speedily to take the place of the horse machines. Then we can thrash out our grain as we draw it in from the field, and put the straw in the barn. And to those farmers who are short of barn room, and who have to stack their grain, this plan will be of even still greater advantage. It saves all the expense and loss of stacking. In stacking grain we always have two men, or a man and a strong boy, on the stack; and in thrashing from the stack, it requires two men, and sometimes three, to pitch the grain off the stack to the machine. Now, in drawing directly from the field to the machine, all we need is one man to pitch the grain from the wagon to the machine, and consequently we save the labor of four or five men. We require three wagons and two teams, one man to pitch, and three men to load, drive, and unload. This force will furnish the grain as fast as any ten-horse power machine can thrash it. Last year I was all through harvesting and thrashing by the first of August, except some oats, and we had four months of good weather, before winter set

in, to get the land ready for spring crops. We shall have no cause to complain of our "short seasons" when we find out how to avail ourselves of the long and delightful period between our early harvest and late winter. We have, agriculturally, the best climate in the world—if we only use it properly.

Low as produce is, farmers in this section have been compelled to pay higher wages this season than during the war. We shall be compelled to find cheaper labor. We shall only find it when we give steadier employment to men and women, and provide work, also, for the boys. "Have you nothing my boy can do?" asked a foreman the other day; "I would rather keep him with me than let him go to the city, but he can get work in the city, and cannot find it here in the country." We must find such boys work and keep them in the country.

Steaming Food for Cattle and Swine.

Many a farmer raises magnificent crops of hay, which he stores in barns, only to feed it out either on the ground or in racks in his yards and fields.

The profit of farming by no means ends with the raising of large crops. The disposition of what is raised is quite as important to success as is the raising itself; and every ounce of nutritious matter which is allowed to find its way to the dung heap, if it might have been converted into meat, milk or wool, is a throwing away of just so much of the result of the year's work. Ample practical experience has proven that the action of the digestive organs of farm animals is not of itself sufficient to extract from hay or corn fodder or grain nearly all of the nutritious matter that they contain; and has shown that, by the aid of cooking, much of this wasted matter may be saved.

It is only within a few years that any conspicuous attention has been paid to the question of cooking food, but its advantages have long been known to careful and scientific feeders. The more recent experiments, made on a large scale, and by practical men, have demonstrated the economy of the operation.

The easiest means by which cooking may be done is with the aid of steam. If it were attempted by boiling in iron vessels immediately in contact with the fire, great care would be required to prevent scorching, and enormous caldrons would be needed. By the aid of steam, the cooking may be safely, conveniently, and economically done, and scorching avoided.

It has been demonstrated by carefully conducted trials, that if all of the hay and other coarse fodder, and all of the grain and roots, fed to live-stock of any description, is thoroughly steamed, quite one-third of the raw material is saved. That is to say, if the month's feeding on a large farm requires 10 tons of hay, 100 bushels of grain, and 500 bushels of roots, the same feeding, with the aid of the steamer, will be accomplished by the use of about 7 tons of hay, 70 bushels of grain, and 350 bushels of roots. Here, then, is a profit of 3 tons of hay, 30 bushels of grain, and 150 of roots, to pay for the use of an inexpensive apparatus, for a small amount of fuel, and a trifling amount of labor. Nor is this all. While successful feeding by the non-cooking process requires the use of the best grain and fodder, steaming enables us to substitute for these, coarser herbage, which may even have become slightly musty, and musty or unsonnd corn. This is in part due to the freshening influence of the steam, and in

part to the fact that the flavor of the roots or bran, or whatever other fine food may be mixed with the cut forage before steaming, is imparted to the mass, and causes that to be eaten which otherwise would necessarily have been rejected. Mr. Thomas J. Edge, of Chester Co., Pennsylvania, gave some months ago in the *Practical Farmer* the result of an experiment in cooking corn for hogs. Mr. Edge found in feeding three lots, of five bushels of corn each, to pigs in the same condition, that when the corn was fed without grinding or cooking, the pork made barely repaid its value—\$1.30 per bushel; that when the corn was ground and made into a thick slop with cold water, the result was slightly better; and that when the ground meal was thoroughly cooked, and then fed cold, he was repaid the whole cost of the corn, and more than \$1.00 per bushel besides. Mr. Stewart, of North Evans, New York, has found, as the result of a long practice in steaming food, that fully one-third of the hay and larger forage fed to neat cattle and sheep is saved by steaming. Messrs. S. & D. Wells, who have a large farm at Wethersfield, Connecticut, and who have a very well constructed steaming apparatus, find Mr. Stewart's results fully sustained in their own practice.

Other advantages of steaming food are, cattle keep in much better condition, butter made in winter has more nearly the yellow color of grass butter, and the liability to heave in horses is almost entirely removed. Mr. Stewart states that a horse which came in from pasture with a very severe cough was cured by the use of steamed food within two weeks after being put into the stable. The manure resulting from the use of steamed food decomposes very much more readily, and is in better condition for application to the land than that which is uncooked and contains more undigested fibrous matter.

Horse Carts for Farm Work.

Like every thing else, a horse cart should be

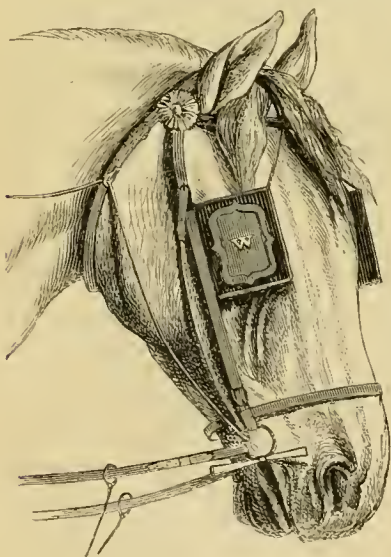
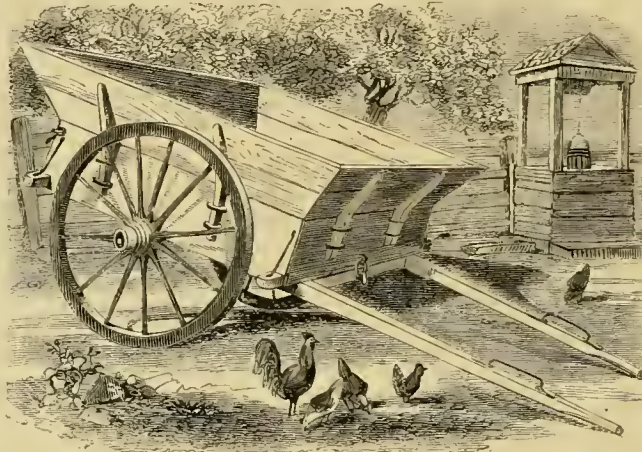


Fig. 2.—SAFETY REIN.

adapted to its uses, and the kind of usage it is expected to have. So, the style of cart best adapted to a stony, rough farm, to be used for hauling stone and earth, is essentially different from one to be used on a level, smooth farm, for all kinds of light jobs, such as taking green fodder to the cow stalls or hog pens; vegeta-

bles or fruit to the village; veal and lambs to market; gathering such crops as beans or roots, on small farms, or doing light work, and errands "for the farm, garden, and household." For such employment the conventional horse cart, such as one can buy at many agricultural ware-



A CONVENIENT HORSE CART.

houses, or such as your wheelwright will be likely to make if you simply order a cart costing \$50 or thereabouts, is not the thing. A much lighter, handier vehicle would be of more general utility, and one may be easily made upon most farms, depending, of course, upon the blacksmith for the iron work. Such an one is shown in the accompanying engraving. The shafts are ash, and attached to the axle. The wheels may be a pair of low wagon wheels, or larger ones, with very broad tread, to prevent their cutting into sward or plowed ground. The body is made of a frame of hard wood (oak), the side pieces being mortised into the end pieces, which extend eight inches on each side. There is, besides, a cross-piece mortised into the side pieces, across the middle of the frame. The box is of seasoned oak boards, one inch thick, nailed to the outside of the frame, strengthened by triangular corner posts in front and iron braces at each corner attached to the outer ends of the end pieces of the frame. The box is then bound with hoop-iron on the upper edge all around, the hooping extending down on each side at the corners. The tail-board is put in very strongly, and held by a rod. This makes a very stiff box, and it really need not be of quite so heavy stuff, unless it is intended to put top boards upon it in the way we now describe. The capacity of the cart body is increased by 14-inch pine boards, fastened upon knee rungs, which go in staples inserted in the cart body. Instead of this arrangement an open rack, of similar construction, may be made of strips, which would be very convenient for carting green fodder, hay, pea brush, and similar bulky articles. The frame may be of 2 x 2-inch stuff, and the bottom boards of the cart of 3/4-inch oak, well nailed all around to side and cross-pieces. We recently saw this cart at the farm of a friend, and liked it so much that we made a sketch of it for the readers of the *Agriculturist*, but find, in some particulars, we must depend upon our memory and impressions for details; our impression is that the size of the body is 3 ft. 8 in. by 5 ft., and that it is 1 foot high.

DRAIN CONDUITS AND DRAIN DIGGERS.—Mr. M. W. Gunn, of La Salle, Illinois, writes for information concerning the use of continuous cement pipes, made in the bottoms of drains as

a substitute for tiles, which, in his vicinity, are absurdly high,—also, with reference to a machine by which ditches may be dug by horse power, stones and other obstructions in the soil being almost unknown. Such a conduit as is often made by moulding in the bottom of a ditch a mixture of cement and gravel around a movable plug has the insuperable objection, so far as underdraining is concerned, that it is impervious, and does not admit water from the soil. If this difficulty could be successfully overcome, as by puncturing the bottom at certain intervals, the plan might answer very well. In the report of the trial of plows at Utica, published by the New York State Agricultural Society, there is an account of the operation of a ditching machine, which produced a favorable impression on the minds of the judges. Some years ago another machine promised to be exactly what is wanted on prairie farms; but, for some reason to us unknown, it has not been generally introduced, and, indeed, has probably never been in the market at all. Certainly a field of profitable invention is open to those who will turn their attention to the construction of a machine by which two or four horses may be made to cheaply dig three or four-foot drains in prairie land.

Safety Reins for Runaways and Kickers.

There are several patented contrivances that render the arrangements which we describe more efficacious and more easily applied, but the principle of controlling a horse by drawing the bit against and so as to stretch the corners of the mouth is nothing new. A very simple way is represented in figure 1. It consists in using strong, flexible straps for the ends of the reins, passing them through the bit-rings, and buckling them together over the head. They should be well greased, and tied fast to the top of the headstall. The effect of pulling upon these will obviously draw the bit upward as well as against the jaw, even though the

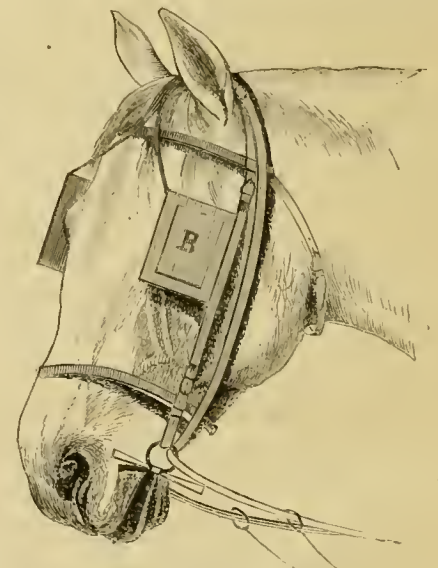


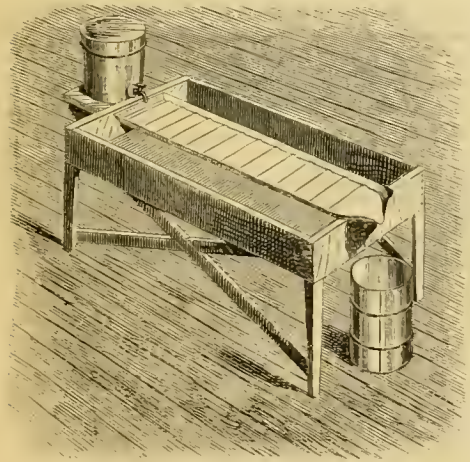
Fig. 1.—SAFETY REIN.

horse curve his neck so as to take the pressure as much on the jaw as possible. The pain may be made severe, especially if the mouth be sawed upon very slightly. Figure 2 represents an old contrivance, also, and one which is much more effective than the one shown in fig. 1, but

it requires a double set of reins. The extra set has simple buckles sewed in the ends, and passes from the hands to the hames rings, then through the gag-runners on the headstall, then through the bit-rings, and the ends buckle upon the tongue of the poll-strap of the headstall, which passes through the buckle of the check or blinker-piece. These reins are perfectly ir- resistible. No horse can stand the pain of even a light pull, and a passionate or heedless man might seriously injure his horse if he were to pull and jerk as usual upon so severe a rein.

Milk in Hot Weather—Coolers.

The care of milk in very hot weather is the source of no little perplexity to farmers, and things often go wrong, adding loss to care. Among the discoveries of recent date, that of the advantages attending the rapid and complete cooling of milk as soon as it comes from the cow deserves to rank among the most valuable, especially as a number of contrivances have been patented, extensively tested, and thus brought to the knowledge of the people. For a fuller discussion of this subject, see the Am. Agricultural Annual for 1869. It is not our province to advertise these patented processes in this part of the paper, as our proper advertising pages are open to the fair statements of those whose interest it is to make them known; but we are happy to show our readers from time to time how, by the exercise of their wits they may get along without "patent rights."



MILK COOLING APPARATUS.

The accompanying engraving of a milk-cooler is from a sketch sent us by one of the readers of the *Agriculturist*, who claims for the apparatus efficiency as a milk-cooler and aëriator, while it is perfectly easy to clean, every part which the milk touches being entirely exposed. The affair consists of a tight trough for water, made of wood, lined with metal, or made tight in any way, about 4 feet long by 2½ in width. Lengthwise across this trough, a shallow one of heavy tin is laid, having transverse corrugations or grooves, about 4 or 5 inches apart. This trough is about 14 inches wide, having the sides two or three inches high. It is depressed about two inches below the top of the water trough, and has a very slight fall from one end to the other. It would probably be found necessary to put one or two three-inch strips across the trough lengthwise under the tin trough, to give it support. The milk trough is narrowed at the discharge end, so as to conduct the stream into a can, and at the opposite end a bracket shelf is placed to hold a milk receiver, out of which the milk should flow in a regulated stream. In use, the water trough is filled with cold wa-

ter or ice-water. In case ice is at hand, the cakes might be confined under the milk-trough. If the milk of a few cows only is to be cooled, this can be done without a constant change of water, and without ice, if the water of a cool spring can be employed; but if it were to be used on a dairy farm, a constant flow of water from the spring would be desirable. In this case the outer trough should be smaller and shallower; the water should enter in a strong stream, as close as possible to where the milk flows off, and be discharged where the milk enters, for thus the cooling would go on most rapidly with a proper regard to economy of water.

With respect to the advantages of cooling milk as soon as drawn, we consider it proved that milk so treated will keep sweet much longer; that it gives up its cream more readily; that it may be kept in deep instead of shallow vessels. We are even prepared to hear that some of our good dairy folks who have the coolers in use are setting their cooled milk to skim in barrels, or similar vessels of tin or earthenware. The last would probably be better than any other.

Red-root or Pigeon-grass.

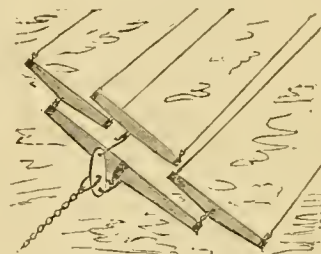
H. N. Janes, of Clinton Co., Mich., says, with reference to the Red-root (*Lithospermum arvense*): "This troublesome weed is growing on many farms in this County, and seems very hard to kill." It is one of the worst weeds the winter wheat-growing farmer has to contend with. It produces a large number of small, hard-shelled seeds, that will lie in the ground for years. The difficulty is not in killing the plants. They are easily killed if they can be got at with the plow, the cultivator, or the hoe. The trouble is that the seeds do not germinate readily, except in August, September, and October. And consequently this weed is rarely troublesome in spring grains or corn. But when we prepare land for winter wheat, the seeds germinate in September and October, and the next spring our wheat is full of Red-root, and we have no means of destroying the plants except pulling them out by hand, or hoeing the wheat. When a farm is badly infested with Red-root, the only sure means of cleaning it effectually is to prepare the land for winter wheat and then not sow it. If the land is well worked in August and September, the seeds of the Red-root will germinate, and once plowing or cultivating in the spring will kill the plants. Sow barley, peas, oats, or spring wheat, and they will be off in time to sow winter wheat. And in this way we lose no crop and get rid of the Red-root.

A Three-horse Evener 8 Inches Long.

While many of us are plodding along with three-horse eveners a third longer than a common double-tree, and heavy in proportion, objectionable besides, on account of the great play they have, Mr. Stephen Mitchell, of Carrollton, Carroll Co., Md., has invented, made, and been using one of only 8 inches long. The idea of an evener in this form is altogether new to us; in fact, we know of no other upright one. There is a patented device, consisting of a double pulley upon which two chains run. The diameters of the pulleys are as 1 to 2, and the chains are wound different ways, so that when two horses are attached to the chain on the small pulley, and a single horse to the larger pulley-chain, in pulling against each other, the power is equalized. It is clear that in this "Mitchell Evener," which we now publish, the lever

is simply substituted for the wheel and axle. We place a high estimate upon this simple invention, and shall be disappointed if it does not decidedly popularize the use of three horses abreast for heavy farm work, which makes a great saving of labor. Mr. Mitchell thus describes his invention:

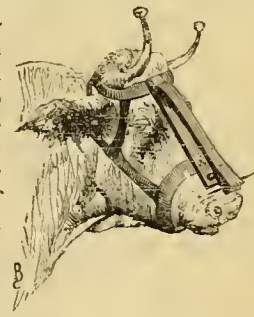
"Since 'Three-horse eveners' are in such demand, I have concluded to send a description of one that I am using, not having seen it described in the *Agriculturist*. I take a bar of iron (1½ × ½ inch) about 8 inches long, and have a link welded in one end, and a long hook, say 8 inches long, in the other, so as to make the distance between the centers of the holes 6 inches. Two inches from the link I put another. When the bar is attached to the plow it stands upright, and is attached to the plow by the link nearest the middle, short end down. To the other link I fasten an evener 4½ feet long, by the center, for two horses. The single horse is hitched to the upper end of the bar. The advantages claimed for this plan are, that the horses are nearer the plow, and the middle horse being hitched to a 'single-tree,' six inches above the others, enables me to use a shorter two-horse evener than otherwise."



MITCHELL'S THREE-HORSE EVENER.

Self-milkers.—A Cure.

A cow may be an inveterate kicker, and be considered excusable from a liberal point of view. She may employ every opportunity to break down fences, jump over them, skillfully take down bars, and make herself a nuisance upon the place, and nevertheless command our respect for her varied abilities; but if a cow is guilty of the miserable habit of milking herself, she puts herself without the pale of even charity. If it is not convenient to dry her off, fatten and kill her, she must be controlled. Several plans for accomplishing this have been already published in the *Agriculturist*, some of which work well. The one herewith presented is communicated by a valued correspondent, who highly extols its efficiency. A thin, strong piece of hard wood forms the connection between the forehead-band and muzzle-band of a leathern halter. This is nailed with clinch nails to the leather, and extends an inch or two below the lower band. A piece of lickory or ash is screwed fast to this, near its upper end. The ends being left thin in the middle



CHECK FOR SELF-MILKERS.

to act as a spring, and it is so arranged that the free end remains half or three-quarters of an inch above the face-piece. Near this end a sharp-pointed nail is inserted, which is well sharpened, and plays through a hole in the face-piece, as seen in the engraving. The least pressure upon the spring causes the sharp nail to prick the nose. Besides this, a needle, sharp at

both ends, is passed horizontally through the spring, and this will prick the sides of the cow if she attempts to suck. We believe the contrivance will work, and it is not hard to make.

How to Build a Row-boat.

Those who live near the water are quite sure to have a boat of some kind, if it be only a roughly made skiff, or a "dug-out." Rowing is capital amusement and good exercise, and a boat is not only a source of pleasure, but is, in certain localities, of great use. We recently saw in an English magazine, directions for building a boat, the engravings of which we copy. Oak is the most durable material, but white cedar, or even pine, will make a much lighter boat. Figure 1 gives a general view of the boat, which is intended to be 16 feet long, and 3 feet wide. Two boards 16 feet long and 16 inches wide will be required for the sides; three boards of the same length and a foot wide will be needed for the bottom, besides material for the stern and other parts. The



Fig. 1.—THE BOAT COMPLETE.

boards for the sides have two blocks, each 2½ feet long, placed between them, and they are bound tightly by means of a rope, as shown at H, H, in figure 2. Insert a strong rod between the ropes at J, and twist it gradually until the ends of the boards nearly meet. Now insert the

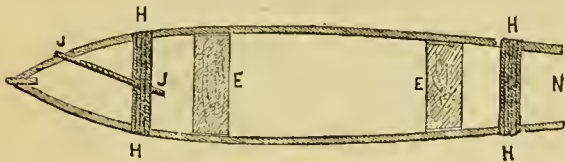


Fig. 2.—SHAPING THE BOAT.

cut-water, which should be a strip 18 inches long, 3 inches wide, and an inch thick; twist the ropes until the cut-water is held fast. Secure the stick so that the ropes cannot untwist, and then bore several holes through both boards and the cut-water, and secure all three firmly

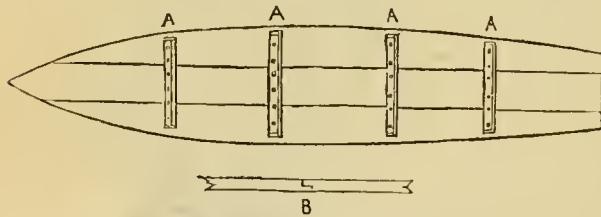


Fig. 3.—THE BOTTOM OF THE BOAT.

with screws. The stern is shown in figure 4. It is 36 inches wide at top, and 18 inches deep, and is fixed firmly to the end of the boat by means of long screws.

The bottom of the boat is made of three pieces, as in fig. 3, the edges being rabbeted, as shown at B. The boards are held together by four pieces, A, A, screwed on firmly. The bottom is secured to the sides by means of long, slender screws, carefully put in, the cross-pieces being uppermost. The keel should be a strip

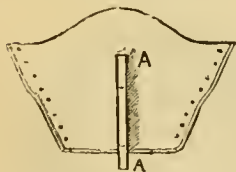


Fig. 4.—THE STERN.

an inch square, and firmly fixed along the bottom, exactly in the center. The rudder is shaped as in fig. 5, with a cross-piece at the top, to which small ropes may be attached for the purpose of working it. It has two iron hooks, D, D, to enable it to be hung to a strip, A, fig. 3, which is placed exactly in the middle of the stern, and is furnished with two iron eyes or screw rings to receive the hooks.



Fig. 5.

Row-locks and seats are to be provided, as in fig. 1. The boat is now to be caulked, which is done by stuffing tow or oakum into every seam or crevice, and afterwards pouring melted pitch over them. If all has been thoroughly done, the boat will be water-tight, and may then be painted inside and out of such color as may suit the taste.

When to Sow Clover and Grass Seed.

There is much discussion upon this subject by the Solons who figure at our Farmers' Clubs in cities. It is claimed as a somewhat novel discovery that grass seed will grow in any well-prepared soil, at any season of the year, and without any sheltering crop of spring or winter grain, as is commonly

practiced. The old-style farmer, and the new-style, if he has any brains, sows his grass seed with his spring grain from convenience, rather than from any supposed benefits which the grain affords the springing grass. The ground has been in a course of preparation for grass during a rotation of four or five years. It has been well manured, thoroughly plowed, and harrowed, and is in the best condition in which the ordinary implements of tillage can put it to receive the seed. He gets his crop of grain and his ground stocked with clover and grass, at one operation. It is laid down and the plow has no

more to do with it for from two to five years, according to the rotation adopted. He expects the grain to keep the clover in check until it is harvested, and the clover to keep the grasses in check until the third season after the sowing. We claim for this practice that it is good

husbandry. If we raise spring grain at all, it comes in as well at this point in the rotation, as at any other. If we do not sow with grain either in the spring or fall, we are under the necessity of plowing and preparing the soil expressly for grass seed, which involves expense without any corresponding advantage. Lawns and small pieces of land that are very thoroughly prepared by subsoiling and coating with very fine loam may be seeded down at any time when the ground is open, yet there is danger of killing the young grass by drought in midsummer, and by frost in winter. The best months in the year for stocking land with grass, in the latitude of New York, are April, August, and September; and nine-tenths of all the seeding is probably done in the first and last of these months.

Cheap Material for Drains.

The question of underdraining is attracting more and more attention, and a growing desire naturally exists for some material better adapted

than tiles for those parts of the country where tiles are not made, and to which their transportation would be costly. Stones we consider out of the question for any organized system of underdraining. Not only are they expensive to prepare and to lay properly in the ditch, but they require a so much larger ditch that the extra cost of digging would usually be more than the cost of providing a more permanent conduit. Brush, poles, gravel, etc., serve for temporary use in new countries, but they are not to be considered when better material can be procured.

Boards sawn from wood that is of no value for any other purpose, coated with coal tar, or, what is still better and cheaper, with crude carbolic acid, will last for an almost indefinite time when buried deep enough to be kept always wet. If these boards are nailed together so that they cannot be displaced by the pressure of the earth,

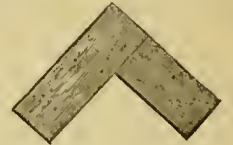


Fig. 1.

and are made in sections not more than five or six feet long, they may be laid in a narrow ditch and will form a drain only inferior to those made with tiles and collars. It is usually recommended that the drain be made of two strips, one 2 inches wide, and one 3 inches wide, nailed together as shown in figure 1—the earth bottom of the ditch forming the floor over which the water is to run. This drain answers a good purpose so long as it remains open, but the liability of the floor of the ditch to be washed away by the current is a serious objection to it, for the earth removed from one place may be deposited in another, and either obstruct the drain entirely or seriously retard its flow.

The use of three boards, as shown in figure 2, is much more satisfactory. These strips are each 3 inches wide and 1 inch thick, securely nailed together, so that the filling of the drain will not obstruct them. This conduit will have a capacity equal to a 1½-inch tile, and will suffice for all lateral

drains not more than 1,000 feet long. At the lower angle (at A) openings should be made by cutting notches in the corner of the board, B, before the trunk is nailed together. In laying, the conduit should be placed with the angle A at the bottom. This will ensure the washing out of any silt that may get into the drain, as even a small stream must flow in that part where all silt would accumulate. It also places the openings for the admission of the water where they should be, because the water enters the drain by rising into it from below. For main drains and long laterals, wide boards may be used. To bear the pressure of the earth, the corner C should be more strongly nailed than the others, which, when once the drain is laid, will have little tendency to be displaced.

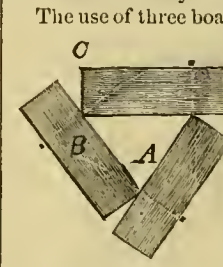


Fig. 2.

Private Herd Records.

Breeders who do not let their cattle run promiscuously, but who make any effort to improve their stock, should keep accurate records of their breeding. These records should show the name, dam, sire, color, age, breeder's name, if bought, and any facts known in regard to the pedigree of every animal, male or female, used for breeding purposes. It is found convenient,

usually, to designate the animals by numbers, which may be used as proper names, or names may be given in addition; or, as is very common, the name denotes the family, while the number marks the individual, and so both name and number become the proper name of the animal. The old cow "Bessie" may have had nine heifer calves named "Bessie 2d," "Bessie 3d," to "Bessie 10th;" and so, too, other more remote descendants are also numbered, as in the case of the Dutchess family of Short-horns. In recording a calf, it is desirable to refer to the pedigree of both sire and dam; hence, in private herd records, it will be found very convenient to use the number of the page of the book in which the pedigree of each is recorded in full, in connection with the name of the sire and dam, so as to avoid indexes or other numbers for reference. In small herds, where but one or two bulls are usually kept, the use of the number is not necessary with names of bulls. Their pedigrees will be recorded by themselves, and it would be many years before the list would be found long, even for a stranger to look through for the record of any animal. Cows are numerous, and there is something to be recorded every year of each one, even if she go farrow, for this ought always to be stated.

The records of pedigrees of purchased animals are often on letter files, slips of paper, or in voluminous correspondence; and even some of our best breeders have no other records than these, except the date that each cow goes to bull each year, and, possibly, the name of the calf when dropped. This causes a great many mistakes, makes uncertainty, and frequently permanently injures the value of excellent stock, or of the whole herd. All these errors are obviated by a well-kept account in a memorandum book.

The pedigrees of all animals ought to be written out in full in what should be called the herd-book. Of these we will give specimens, but first describe the "calf memorandum," which is of vital importance. It would be well to rule off a blank book as follows, so as to bring the cows' names first and the calves' last:

CALF MEMORANDUM.

Cow.	Page.	Bull.	Date '68.	385 days.	Calved.	Color, Sex, Name.	Page.
Topsy	(25)	Uncas	Mar. 30.	Jan. 5.	Jan. 8.	Dk Brown Heifer, Tippet.	49
Bonnie	(16)	Lucas	April 1.	Jan. 7.	Jan. 8.	Squirrel Gray Bull, Bill.	93

The interpretation of this is simple. The cow Topsy, whose pedigree is recorded on page 25, went to Uncas on the 30th of March, 1868; her time was up January 5th; the calf dropped January 8th was a dark brown heifer, named Tippet, whose pedigree is recorded on page 40. In this list all the cows are recorded as fast as they are served. If one misses, a line is drawn through the space after the fourth column; and she is recorded again.

Now, on turning to page 25 of the herd-book we find Topsy's pedigree, which we will suppose runs as follows:—

Topsy.—French gray, with white shoulders and belly, calved May 3d, 1862. Sire, Stirrup. Dam, Tossup, (10) by Stirrup; granddam Tabby, (3) by Jersey 1st.; Gr.-granddam Tiny, imported in cow Beauty, from Island of Jersey, by John A. Taintor. Tabby was bought of X. Y. Zadoc. See Certificate C. 6, and Bill of Sale S. 1. Here follows a list of her calves, with the dates of calving, and of prizes taken, or interesting performances. The pedigrees of the bulls will be found in their proper place. That of Stirrup may run as follows: *Stirrup*.—Dark gray, calved June 5th, 1859; bred by A. B. C. Dugan. Sire, imported Lord of the Channel.

Dam, imported Sappho. Bought of E. F. G. Hawley, of Fishkill Landing, N. Y. See Letter and Certificate B. 1., and Bill of Sale S. 3.

These references, C. 6, B. 1., are to letter files, containing correspondence and evidence in regard to purchased cows or bulls, and S. refers to a file of bills of sale. The evidence in the case of every animal not calved upon the farm should be full, tracing every progenitor to the home of the breed, or to animals recorded in English herd-books, if Short-horns or Devons.

We have had a good deal to say about the value of pedigrees of late. They are valueless unless they are accurate, and it is only by keeping memorandums, similar to the example given, that pedigrees of certain value can be had. No man's memory can be trusted implicitly, and it is all wrong for a breeder to depend upon it for facts he can just as well put down in black and white when they happen.

Draining by Means of Wells.

A correspondent asks our opinion of the plan of draining land by the use of wells, bored down to porous strata, by which the surplus water of the surface soil may be carried away,—stating that, by the aid of the well-boring apparatus, such outlets may be made at far less cost than the regular system of underdraining entails. The objections to this plan are numerous and cogent:—1. It would be difficult to devise a plan by which the soakage water of the soil could be admitted to the vertical outlets without carrying with it loose particles of earth, which would soon fill them up.—2. If these wells were left unlined, they would soon become obstructed by the caving in of their sides; while, if so lined as to be permanently secure, they would be very costly.—3. In a large majority of cases no stratum would be found that would carry away the water.—4. Not infrequently a water-bearing stratum would be tapped and water would flow over on the surface of the ground.—5. The presence of stones, larger or smaller, would often interrupt the boring and make it very expensive, while rock would be impenetrable at any cost within the reach of farmers.

—These objections are very general, but not universal. For example, Long Island, N. Y., containing more than a million of acres, is mainly underlaid by porous sand and gravel. This often comes to the surface, forming sandy tracts, while in other parts there is an upper layer of common and very good soil, varying from a few feet to a hundred or more feet in depth. In Flushing, and in other towns, it is a very common practice, where surface drainage is not easy, from the lay of the land, to dig wells or "cess-pools" from 10 to 50 feet deep, as needed, extending them 5 to 8 ft. into the underlying land. These cess-pools, stoned to the surface, carry off an immense amount of clear water drained into them. Where impure or muddy water flows in, it is necessary to clean out the bottom occasionally. There are such plots in other parts of the country, though not very common; and in these cases, this drainage system is of course cheap, and, temporarily at least, effective.

Another correspondent suggests the same method for draining small swamps, of a basin-like character, by cutting or boring wells through the clay bottom of the basin. If such a swamp is underlaid within a reasonable depth by a porous stratum, gravel, for instance,—which has an outlet at a lower point—a large well as an

outlet for regularly laid underdrains may be dug. A well of this character is much more easily kept open than frequent bore-holes would be, and the drains, laid in accordance with a well-considered plan, would be more effective, especially to remove the water from surrounding hills, than any system of small wells could be.

A "Dispensation of Providence."

I found Neighbor Simpson one March morning in his barn skinning a ten-months' calf. I noticed that the throat was not cut, and concluded it was not a case of slaughter for the shambles. The flesh did not look inviting, and the bones were a little too conspicuous for "the fatted calf." Simpson said he had tried hard to raise the heifer, but could not make it out. "She kind o' hung round the barn, didn't eat much, and last night she died. It is a hard case, a very mysterious dispensation. Ye see, I shall lose ten months' keepin' on this critter, and git nothin' but the hide." By pumping Simpson cautiously, I found it another case of death by bog hay and cold. The animal was kept in a poor pasture through the summer, and came to the foddering season in thin flesh. Mouldy butts and bog hay had been the bill of fare, and these were fed out upon the snow at the stack, with no shelter but chestnut rails. There are two ways of looking at this dispensation, as he was pleased to call it. He thought he was not at all responsible for the treatment the poor brute had received, and laid the blame upon Providence. It is just possible that Providence has ordained the conditions of animal life with which he trifled, and that his loss was designed as a punishment for cruelty. The mysterious thing about it was that Simpson did not see it in this light. CONNECTICUT.

"Thorough Cultivation."

[The following is the substance of a paper read before the Alton Hort. Society, by our correspondent, Mr. O. L. Barler.]

If there is one fact in horticulture more than another, that is being impressed upon my mind, it is the necessity of the thorough cultivation of the soil—a term often used, but not, perhaps, with sufficient definiteness, as what one man calls thorough culture, another does not. When first commencing to stir the soil, I thought I could easily cultivate a certain number of acres with a given amount of working force. The second year saw an increase in the working capital, and a decrease in the number of acres; and every year since we have felt the necessity of hiring more labor, without increasing the area under cultivation. It is estimated that, in gardening operations, ten men will work ten acres as it ought to be done. This demand is, perhaps, more than we may feel able to meet at present; still we must come to this if we expect the best results. To thoroughly cultivate—that is, to thoroughly *fertilize*, for that is the meaning of the term—necessitates a frequent stirring of the soil, not simply to plow when the weeds appear. Thorough culture has a broader mission than this of weed killing. To cultivate is to make productive—to manure; and to this manuring of the soil we are indebted for the best results on the farm and in the garden. When, and how often, then, ought we to stir the ground? Always after every rain, and as soon after as the ground will work well. The frequency of the plowing will depend, in part, on circumstances, on the nature



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TROPICAL FISHES.—Drawn and engraved for the American Agriculturist.

of the soil, and the character and advancement of the crop. "Once a week" is not enough. The idea of plowing simply to kill weeds is ridiculous! We seek, in the frequent stirring of the ground, a mellow soil, with open mouths or pores, eagerly taking from the atmosphere an abundance of plant food. Some plants, the melon for example, take more from the air than from the soil; or rather the soil, in a proper condition, takes from the atmosphere much of the food which it gives to the plant. If we have weeds, we must, of course, fight them to the death; but it is a shame to have weeds, and a double shame to sit at our ease and wait for the weeds to grow! In order to practice thorough cultivation we must have straight rows, and rows both ways, and level culture. These points are all important, and none more so than *level culture*, especially on hill-sides, where it has a tendency to prevent severe washing, which is a great evil, as all know who have farms on the hill-side. Good culture implies, on our soil, a moderately deep stirring of the soil, so long as the roots of plants are not disturbed by the operation; and deep culture implies horse-power, and this suggests the check-

row system, of which we have spoken. The one-horse plows and cultivators must be kept in constant motion in the growing crops. There is work, also, for the hand-hoes and various kinds of weeders, in this system of thorough doing.

Tropical Fishes.

Those who are familiar with only the salt and fresh-water fishes of the northern climates, have but little idea of the strange shapes and brilliant colors of those inhabiting tropical waters. When Barnum's Museum was in its glory it contained a splendid collection of fishes from Bermuda. We heard a lady exclaim on seeing one of the Angel fishes, "Oh! that is a Bird of Paradise in the water." The group presented in the engraving are fishes of Ceylon and other parts of the East, and belong to the family of *Chatodons*, which means fishes with hair-like teeth. They have peculiar muzzle-like mouths, very large scales, and singularly-shaped fins, which characters, taken together with their brilliant colors and strange markings, make them very noticeable. The fish represented on the

lower right-hand side of the engraving is the Wandering Chatodon, which has a golden yellow body, marked with purplish brown lines. The one at the lower left-hand side is the Long-spined Chatodon, or Charioteer. The singular prolongation of one of the spines of the back fin, as well as its unusual outline and well-defined markings, make this a most remarkable fish. Upon the upper left-hand side we have the Bat Chatodon, distinguished by a very much compressed body with an enormous development of fins. Its color is yellow, mottled with dark brown. Opposite to the last and near the surface, is the most singular of all, the Beaked Chatodon, odd-looking enough from the marks upon its body, but still more odd from the way in which it takes its prey. It uses its beak as a blow-gun, and when an insect is seen within reach, it suddenly shoots a drop of water at the unsuspecting "bug," which falls into the water, an easy prey to the fish. The Japanese are said to keep these fishes as pets, and find great amusement in seeing them shoot their game. The artist has introduced some corals and sea-anemones into the picture, about which we may say more at another time.

The Woodruff.—(*Asperula odorata*.)

The Woodruff of the English, and the Waldmeister of the Germans, is *Asperula odorata*, and grows all over Europe and in Russian Asia. With us it is cultivated as a garden plant for the beauty of its minute white flowers. It blooms early, and a patch of it makes a pleasing appearance with its profusion of small and pure white flowers. The plant grows from six inches to a foot high, has a square stem, and bears its leaves in whorls. The flowers are succeeded by minute hairy fruits. The plant when wilted gives out an odor like that of newly made hay. The 'Waldmeister' is highly prized by the Germans, who in spring make with it what they call "Mai Wein," or "Mai Trank," and in Germany they go upon picnics for the purpose of collecting it. We have no *Asperula* in this country, but several species of *Galium*, closely related to it, and one of these, *G. triflorum*, has a similar odor to the Woodruff, and is used by the Germans as a substitute for it. Aside from the use to which the Woodruff is put by the Germans it has an interest as an ornamental plant, and if one wishes to cultivate it for flavoring his wine he can in this country grow it with ease. It is sold by some of our nurserymen and florists. We have only one plant and, of course, none to spare.



THE WOODRUFF.

and female, flowers are borne on different plants. The pistillate flowers, as shown at the right of the engraving, are attached to long, slender, and spirally coiled stalks, which allow them to rise to the surface of the water. The staminate flowers are borne on short stems at the bottom of the water, and in a position where, under ordinary circumstances, fertilization would never take place. But by a remarkable provision the staminate flowers, as soon as mature, break off, rise to the surface, expand, and shed their pollen, and thus fertilize the pistillate ones. When the female flower is fertilized, the coiled stem contracts, and draws the flower beneath the surface of the water, where the fruit ripens. Those who write us to know what plants are best suited to a fresh-water aquarium can hardly find one better for the purpose than the Vallisneria. It lives well in confinement, and grows summer and winter, and if one is fortunate enough to get both staminate and pistillate plants, he can observe the curious phenomenon we have briefly described. Those who have microscopes of considerable power will find in the leaves of the Vallisneria a most beautiful object, as they show the circulation of the contents of the cells in a most distinct manner. The Vallisneria flourishes even in brackish streams, and is abundant in the Hudson River, at points where several salt-water plants are found. This species is found also in Southern Europe, and in other warm countries, and there is another species confined exclusively to Australia. There are several other plants more common than the Vallisneria, which will answer for the aquarium. Indeed there are few fresh water streams and ponds but will furnish one or more. The majority of those plants which live entirely submerged, and some of those the foliage of which is in part floating, will live well in a tank. There are two species

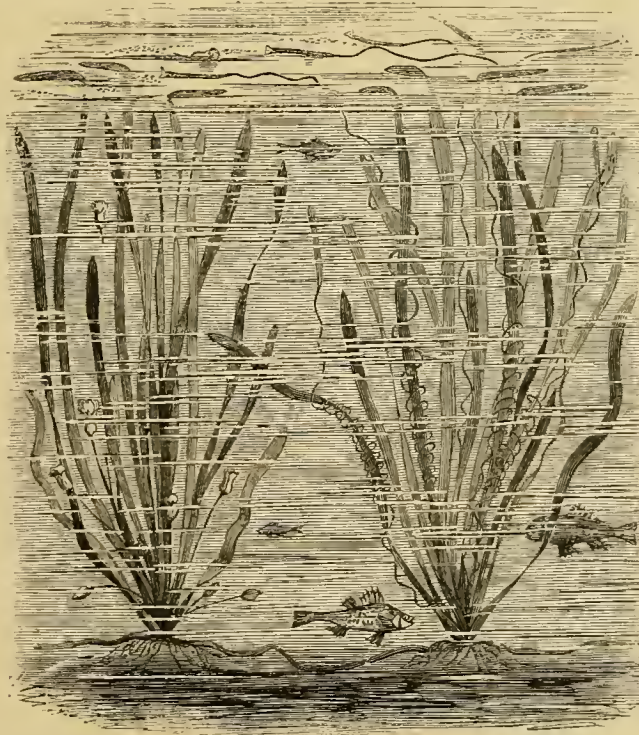
The Solomon's Seals.

Among the wild flowers of June, the Solomon's Seals are noticeable and interesting. Their leafy green stems are graceful, and be-



SOLOMON'S SEAL.

neath the foliage hang small clusters of flowers, which, if not elegant in themselves, are interesting taken as a whole. We have two species quite common, the Smaller and the Great Solomon's Seal. The botanical name is *Polygonatum*, which means many knees, in reference to the numerous joints of the plants; the Smaller, the one figured, is *Polygonatum biflorum*, and the Great is *P. giganteum*. Two beautifully variegated Solomon's Seals have been sent from Japan, by Mr. Thomas Hogg. The popular name is derived from a peculiarity of what is popularly considered the root, but which is really a root-stock, or underground stem, shown on the next page. The fleshy underground stems, when dug up, show markings which appear as if they had been impressed. These are scars left by former flower stalks. This underground portion is really the stem proper, and it throws up each year one or more flowering stems, which die away in autumn, and their departure leaves the scars or seals referred to. It will be noticed that at the end of this subterranean stem, there is a bud, which will the next year throw up a flowering stalk, and so the growth will keep on, the old root-stock furnishing a store of food for generation after generation of flowering stems. The oldest portion of such an underground stem gradually dies away, while the newer is each year advancing. Both the natives here noticed are worth growing by those who do not think that



TAPE-GRASS—(*Vallisneria spiralis*.)

The Tape-grass or Eel-grass.
(*Vallisneria spiralis*.)

There is scarcely anything more curious in vegetable life than the fructification of the Tape-grass, sometimes called Eel-grass, but not the salt-water plant bearing that name. The Tape-grass, *Vallisneria spiralis*, is common in ponds and slow streams, but as it makes but little show above the surface, it is not noticed except by close observers. It is represented in the engraving much reduced in size. The leaves grow from two to four feet in length, according to the depth of the water, are flat and tape-like, and a quarter of an inch or more in breadth. The curious thing about this plant is its manner of flowering; the staminate and pistillate, or male

of water Buttercup, the Water Milfoils, the Water-weed (*Anacharis*), Water Star-wort, and others, which make good aquarium plants.

brilliance of color is the sole merit of a plant, but can admire a graceful habit as well. Two other plants commonly called Solomon's Seal



Fig. 2.—ROOT-STOCK OF SOLOMON'S SEAL.

belong to the genus *Smilacina*. Though resembling those we have noticed in their foliage and general appearance, they bear their flowers in a cluster at the top of the stem.

Selecting Seed Stock.

BY AN OLD SEED GROWER.

Select a few Beets, Carrots, Cabbages, Celery roots, Onions, Winter Radishes and Turnips, before the crops are gathered in the fall, and keep and grow them separate from the main crops for your own sowing. Do the same with all annuals, selecting Cucumbers, Melons, Squashes, Tomatoes, etc., before the crops are harvested, in sufficient quantity for your own planting the next year or in other years, if the variety is particularly pure and very choice. This is the only way to keep up and improve the stock. By planting every year the seeds of the previous main crop, the seeds will degenerate and finally become worthless.

Whatever the desired quality may be it should be approached as nearly as possible in the selection. If it is earliness, choose the first perfectly matured root, fruit, plant or seed, that is a pure sample of the variety. If flavor, tenderness, or productiveness is the quality required, mark the plants made choice of for preservation, and save the seeds by themselves.

In the Blood Beet look for deep color, free growth, smooth, handsome form, small top, without neck, and sweet, tender flesh. Light red beets are earlier, and grow larger than the dark blood red.

In the Carrot, select those having a small top, smooth root, and deep orange color.

With the Cabbage, choose those with short stump, large, compact head, with but few loose leaves.

In the Cucumber, straight, handsome form, and dark green color are desirable. With Lettuce, select large, close, tender heads, free from bitterness, and the slowest to run to seed.

In Sweet Corn, choose uniform, straight rowed ears, very sweet, shrivelled kernels, well ripened and filled over the end of the cob.

The Citron or Muskmelon should have a rough, netted skin, thick, firm flesh, and high flavor. I never saw a really good melon with a smooth skin.

In the Watermelon, select those with a thin rind, bright red solid core, very sweet flesh, and handsome shape.

With the Onion, thick, round shape, small neck, either deep red or bright coppery yellow, like the Danvers, or pure white. Free growth, early maturity, mild flavor, and good keeping quality, are to be sought.

In the Parsnip, there should be a small top growing out of the center of the crown, large, smooth root, sweet and mild flavor.

In the Pea, low growth, full pods, and large tender peas, rich flavor, and great productiveness, are to be sought. Wrinkled peas are best.

The Scarlet Radish should have deep color, small top, free growth, and clear brittle root.

In Squashes select those of medium size, and dry, fine grained, deep colored flesh.

In Peppers, select the thickest fleshed, smoothest, and handsomely shaped, and earliest ripened.

With Tomatoes save the earliest ripened, if smooth and handsomely shaped, and perfectly solid. Select from plants, if possible, upon which there is not one ill-shaped fruit. Cut every tomato crosswise, and see that it is solid before saving it for stock seed.

In the Turnip, handsome form, small top and tap root, free growth, and sweet, crisp flesh.

Medium sized roots should be selected in preference to the largest, as is often done in private gardens, unless it is desired to increase or lessen the size, when the largest or smallest should be chosen. In all selections aim at improvement in the purity, quality, and productiveness of the variety, although it will in many kinds materially lessen the crop of seeds. Mongrels generally yield a great deal more seed than pure varieties, and this, besides the labor of selecting, isolating, and "rogueing" (as the culling out mongrels from the growing crops is called), is the reason why the raiser of pure seeds cannot afford to compete in prices with careless and unscrupulous growers.

How to Set a Hedge.

Mr. W. H. Earl, Lawrence, Kansas, noticing what has been said by others on the manner of setting hedges, sends us his plan as follows:

As there will in the next few years be many hundreds of miles of hedge put out in Kansas, I am interested in having it successful. I will illustrate what I consider the proper manner of setting with a spade. I have a spade made for the purpose, shaped as in fig. 1. The blade is made of steel, three inches wide, and a foot or more in length, perhaps half an inch thick in the middle, and bevelled to an edge all around. The upright is of three-fourths-inch iron, with an arm out at the side for the foot; the iron is split at the top, and a wooden handle riveted in, but the work can be as well done with a common spade, except that it will require extra labor.



Fig. 1.

Figure 2 will illustrate my idea. Let the spade be inserted at about the angle shown at A, then be drawn back to B, next pushed forward to C, and withdrawn, and the plant inserted, which should be done before the spade is fairly out of the ground, to prevent the dirt filling up the hole. Then comes the "setting" part, which

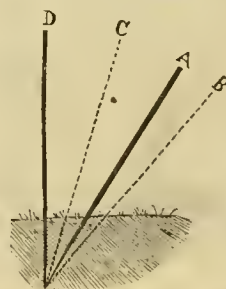


Fig. 2.

is done by inserting the spade again at D (which, if the ground is in proper order can be done without the use of the foot), commencing about three inches from the shoulder of the plant, and striking as near as possible the end of the root; draw it back to C, and withdraw the spade, at the same time giving it a slight twist, which will fill the hole with earth sufficiently. By setting out plants in this manner, the dirt can be pressed to the plant the full length of it, instead of just at the shoul-

der, as is the case where the foot is used, as the plants are often set more than a foot in depth.

Notes from "The Pines."—No. 3.

"H. W. B."—of course no one can guess who that means—once said to me that he believed in total depravity if "judiciously applied." If I was not at the time, I am now a convert to the Brooklyn parson's view. Total depravity exists among poultry. There was a poultry-house here, which, like everything else in the way of out-buildings, was close to the road, and so ingeniously contrived that the poultry could find access, but no other bipeds could get in. Another house was arranged with most convenient roosts and retired nests, and the fowls placed there for two days with plenty of food, so that they might hold a house-warming. The third day they were let out, and that night, instead of going to their nicely prepared quarters, the old house being in the mean time demolished, they were all found roosting on the wagons under the shed. They were caught and put into the house, and then, instead of taking to the roosts prepared for them, they went and perched upon a beam close under the roof.

But I don't ascribe depravity solely to bipeds with feathers; it is very prevalent among hired men. Ours was asked if he could plant cucumber and melon seeds. From his reply one was warranted in believing if there was any one thing this man could do it was to plant those very seeds. The hills were made and the seeds put in very early, the proper time elapsed and no plants came; the weather had been rather cold and rainy, and he was told to replant. The replanted seeds did not come. At last it came time to put in the main crops of these things, and the Doctor happened along with the seeds just as the man had his ground ready. Several holes were punched in each hill with a hoe handle, each about four inches deep, into which he intended to drop the seeds. The reason of former "bad luck" was plain, and we took back some unexpressed opinions about seedsmen. A friend and a not distant neighbor, who is a well-known horticulturist, when he goes to the City, tells his men that they can sit under the shed until he returns, as he is sure they will do some mischief if they work while he is absent. If our man had sat under the shed during our absence, the prospect for early cucumbers and melons would have been better.

If any one doubts the necessity for mulching strawberries he should see our bed. Spring work was so pressing that we were unable to mulch the whole bed. The berries from the mulched portion sold for 35c. a quart right at home, while those from the vines that were left unmulched were so poor and sandy that we would not offer them. Let us have mulch.

Now about Strawberries.—What have we to supersede the Wilson? The nearest approach to it in growth of plant and quantity of fruit that we have yet seen, is Downer's "Charles Downing." Mr. Downing is a veteran fruit grower, and has too much regard for his reputation to send out a variety that he does not consider valuable. His Downing's Prolific is one of the most profitable berries, after the Wilson, yet sent out. It is early, most prolific, and very sour. His Charles Downing is a great improvement on his Prolific. It makes an equally vigorous growth, but it at the same time gives us an excellent fruit,—we may say superior fruit.

—We met Dr. K. this morning and he said, "Do you know that the best strawberry in all this neighborhood is the Agriculturist? I have been to So and So's place, and the ground is actually covered with them." Now the way with all strawberries—except the Wilson—is to do well here and there, but not generally. We hope to find a berry that has all the good qualities of the Wilson and none of its faults. We hope, but are not sure, that the Chas. Downing will be this berry. We are giving it a trial and will publish our experience and that of others.

Are strawberries profitable? This is a question I have not seen satisfactorily answered. I know that people make money by selling the plants, but does it pay to raise the fruit? Will some one who has been in the business for five years give us the figures? From all I can see of strawberry culture about here, I do not think it will pay as generally conducted. If one will raise choice fruit and send it to market in good order, it will no doubt pay; but take the average of fruit in the market—small berries in small baskets—does it pay the growers?

What a center New York is! Every day as I cross the ferry, I see every other man carrying something from the city to the country to plant. Were I a political economist I should write a dissertation on this subject; but as I am not, I will say that the only way to get a good collection of native American plants is to order them from England, and that the first set of California plants I had was from seed raised in the Royal Garden at St. Petersburg. New York gathers in and distributes; the dwellers for fifty miles around know that they can get everything they want of Henderson, Bliss, Thorburn, Allen, and a host of other dealers, and they might run about for days in their own neighborhood and not find the few Tomato, Pepper, Egg, Sweet Potato, and other plants, that they need. A curious illustration of this occurred this evening. A man came down in the same car with a large handful of the flowers of the Sweet Bay (*Magnolia glauca*), and got out at our place. He had bought these flowers from a side-walk dealer in the city, and they were brought from a swamp not more than three miles from his residence. But I can't discuss political economy; I leave that for H. G.

A gentleman from Michigan, whose place we have visited with pleasure, called a few days ago. We asked about his cultivation, and learned that he had about twenty-five acres in onions; "and," said he, pointing to a piece which had recently been gone over, "all of it as clean as that." "What do you work your onions with?" "Comstock's weeder, elegant!" Now, we have used Comstock's weeder, and were prepared to say that it was a good thing, and were glad to have Mr. G.'s corroborative testimony. Like all such things, one must get acquainted with it and learn its capabilities and the changes of which it is susceptible.

That excellent horticulturist, "H. W. B.," aforesaid, once wrote in a note, "Did you ever try the Little Gem Pea? It is a little gem." I have tried it, and fully concur. The author of "Five Acres too Much" makes sport of dwarf peas, but he did not have the Little Gem. The Tom Thumb is a delusion and a snare, but the Little Gem is a treasure to grow, and delightful to eat. It comes up and then stops, and you wonder why the thing don't grow; white specks appear, and you wonder why it don't

bloom; day by day I waited impatiently for those peas to bloom, when lo! there were already half-filled pods. The vine does not grow a foot high, and the blossoms are as dwarf as the vines, but it pods prodigiously. I wish it had been tried to see how many peas could be raised on a given space. The rows can be put as near as they can be worked, and I doubt not that they will be found as profitable as they are good. The Little Gem is one of the wrinkled Marrow Peas, early and dwarf. There are many people in the world who "don't know beans," but there are more who don't know peas. Whoever has not eaten a Wrinkled Marrow, which finds its glorious culmination in the Champion of England, has a sensation in store for him. I make my bow to Mr. McLean, who originated the Little Gem. I also bow to B. K. Bliss & Son, who thoughtfully sent me the seed, and I bow to the pea itself—which ends my "Peas Jubilee."

Supports for Tomatoes.

In the family garden it is almost impossible to get along without some kind of support for the straggling tomato vines. That the necessity for this exists is shown by the numerous devices that have been sent to us, and which have from time to time been published. The latest thing of this kind comes from L. L. H., Terrebonne, La., and is shown in figure 1. The rack

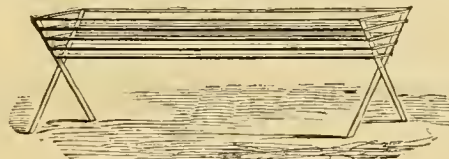


Fig. 1.—RACK FOR TOMATOES.

is 10 feet long, and 3½ feet high. If the ends of the legs which go into the soil are covered with coal tar, the frame will last several years. A friend of ours, who is a tomato fancier, uses racks made of common laths, nailed to rough inch stuff or even common bean poles, and put

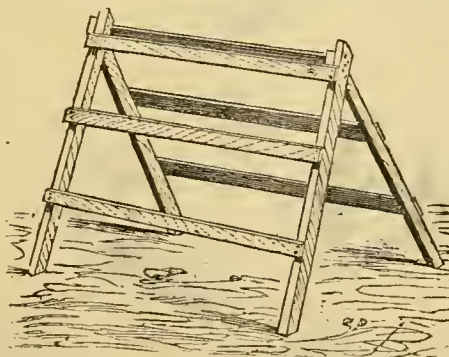


Fig. 2.—LATH SUPPORT FOR TOMATOES.

together tent fashion, as in fig. 2. They may be tied together or fastened by a bit of wire. The superior quality of the fruit and the greater ease with which it can be gathered will abundantly repay the small amount of labor required to provide some kind of rack or trellis.

Propagating the Rose.

Several ask us how they can multiply their rose bushes. At this season layering produces the best results. Cuttings at this time require extra care, but layers can be made by those not skilled in horticultural operations. Layers may be made of vigorous and healthy shoots

upon which the leaves are not so mature as to show signs of dropping. The cut is to be made on the upper side of the stem and not below, as has been recommended. The engraving shows



LAYERING THE ROSE.

the proper manner of making the cut. The soil around the bush may be enriched and prepared to receive the cuttings, or they may be rooted in pots of rich soil. In either case it will be found advantageous to put a covering of moss over the layered branch, to prevent the evaporation of moisture from the soil. Most varieties of roses may be well rooted and those of the tender kinds may be made strong plants to be kept over winter in cold frames if layered this month in the way we have suggested.

Saving Flower Seeds.

The humorous author of "Five Acres too Much" found great difficulty in securing his flower seeds. We doubt not that many of our readers have experienced the same trouble. Nature has made ingenious provisions for scattering the seeds of plants, and with our cultivated ones we have to observe these. If one waits until his Phlox, Pansy, Balsam, and some other seeds are ripe, he will gather none. These plants and others have a way of bursting their capsules as soon as ripe, and throwing the seeds as far as possible. The only way to manage these is to take them as soon as the seed vessel is fully formed and shows signs of maturity, and put them where they can scatter without loss. We have used wire sieves to cover such seed pods, and found them to work admirably. It is necessary for one who would save seeds, whether for his own use or for sale, to study the habit of each plant, see what its natural mode of distributing its seed is, and anticipate it. Let us remark here, as we have often done before, that it is best to sow the seeds of herbaceous perennials as soon as they ripen. They will give plants sufficiently large to winter over and they will generally bloom in spring.

Management of Black-cap Raspberries.

Mr. J. N. Sterns, Kalamazoo, Mich., gives his method of cultivating the now very popular Black-caps, as follows: The Black-caps are propagated by the tips of the canes bending down and taking root. These roots, or plants, are set out in the spring. The first year after setting they send out long shoots, near the ground, which, if allowed to do so, will take root at the tips, as stated above. If fruit only is the object, they should be trimmed back to within ten inches of the main canes. This should be done about the middle or last of August. The second season the canes will grow much stronger and higher; and when they have reached the height of thirty inches, they should be pinched at the ends, which can be easily done with the thumb nail, as they are very tender at that time. This will cause the canes to send out laterals in abundance, which, if no plants are wanted, should be trimmed as stated above. But if it is desired to increase

the stock of plants, the laterals should be allowed to take root at the tips, which they will do in September. The number may be increased by throwing a little dirt on the tips as they show signs of taking root. The plants may be taken up in the fall, but I prefer to leave them until spring, then take them up, and trim them back to ten or twelve inches of the main cane. When pruned in this manner the fruit will be much larger, and the plants will produce as many quarts as when the canes are left full length. One thing should be borne in mind, which many appear to be ignorant of, that raspberries of all kinds produce new canes every year, which bear fruit the next, and then die. After fruiting, the old canes should be cut out.

The Deerberry or Squaw Huckleberry.

On going through our wood lot a few days ago, we were delighted to find an old friend which we had not seen for years, the Deerberry or Squaw Huckleberry, *Vaccinium stamineum*. It is a not very common low bush, two or three feet high, and with very spreading branches. Its flowers are broadly bell shaped, and not unlike those of the Lily of the Valley. They are borne in great profusion in a spreading, leafy raceme, and are succeeded by a greenish, and not very eatable berry. The general appearance of the plant, as well as the shape of the flowers, is so unlike that of our ordinary huckleberries that one at first sight would not suspect their relationship. The shrub when in full flower is both graceful and showy, and we propose to try what it will do under cultivation. It has a shy and wild-wood look about it that would be very pleasing in contrast with the more prim and formal flowering shrubs.

ABOUT ASPARAGUS.—Despite the ravages of the beetle, asparagus this season has been remarkably fine. Mr. J. Layton, of Oyster Bay, brought us a bunch which well maintained the reputation of the Oyster Bay asparagus, and which will be hard to beat by the newer sorts. Jacob Macclane, of Middletown, N. J., is in the market with a new variety, Macclane's Colossal, which is certainly large enough and good enough. Then comes S. B. Conover with his Colossal, which makes one wish his mouth were wider or the asparagus smaller. We are glad to see a rivalry in asparagus. We have had the poor, tough and miserable blanched sticks long enough, and now these new sorts promise us something succulent and eatable. We have these new kinds on trial, and if they

produce results only half as good as claimed for them, we shall be satisfied. It is asserted by some that there is but one sort of aspar-

agus, and that the claimed improvements are produced by extra manuring. We do not see why asparagus, like other cultivated plants, should not "break" and give us new varieties. At any rate we shall see what these sorts will do. Mr. Conover brought us a bunch from some plants found growing with his Colossal, the stalks of which were slender, and of a peculiar

The Grecian Silk.—(*Periploca Græca*.)

Among the climbing plants which are worth growing, but which we seldom see, is the Grecian Silk. It is a twiner belonging to the Milkweed family, and has flowers and fruit in shape much like those of our various species of *Asclepias*, though differing in some minute particulars. The plant is a native of Europe, but has become naturalized in some parts of the country, it having probably escaped from cultivation. The leaves are very smooth and shining, and the flowers, of the size and shape shown in the engraving, are of a brownish purple color, and borne in a loose

cluster. The pods are smooth, and when they burst, liberate the seeds, each of which has attached to it a beautiful silky tuft, by means of which it is wafted away by the winds.

IN A DRY TIME there is nothing like scratching. Use the rake or pronged hoe between the plants. Do not wait until weeds demand that the surface be stirred, but do it because it will help the growth of the plants. A light, broken surface will prevent the evaporation of the moisture already in the soil, and it will attract the dews more readily than will a smooth surface. When the ground is in proper condition, a heavy, sharp steel rake, with long teeth, will do great execution in weed-killing.

THE CANNAS.—It is a pleasure to see them grow. They unfold their broad leaves, each larger and more luxuriant than the last, with a vigor that is admirable. M. Jean Sisley, of Lyons, France, sent us a dozen from his collection, and they are of daily interest. They vary in color from pale glaucous green to dark bronzed red; some have the leaves striped, and all are beautiful individually, and more beautiful as they are grouped together. In an article in February last by Mr. Sisley, an account is given of the origin of some of the new varieties. We there made Mr. S. say that the roots should be taken up when frost has killed the foliage. Mr. S. informs us that the improved varieties should be taken up before the leaves are killed, as otherwise there is great difficulty in preserving the roots through the winter. Our climate is particularly favorable for the development of the Canna, and we hope that our amateurs will turn their attention to raising seedlings, looking not only to striking foliage, but to perfection in the flower, which is capable of great improvement, both in form and color. We hope that the Cannas will become with us, as they are in Europe, the most popular of plants cultivated for the beauty of their foliage,



THE DEEBERRY—(*Vaccinium stamineum*.)



GRECIAN SILK—(*Periploca Græca*.)

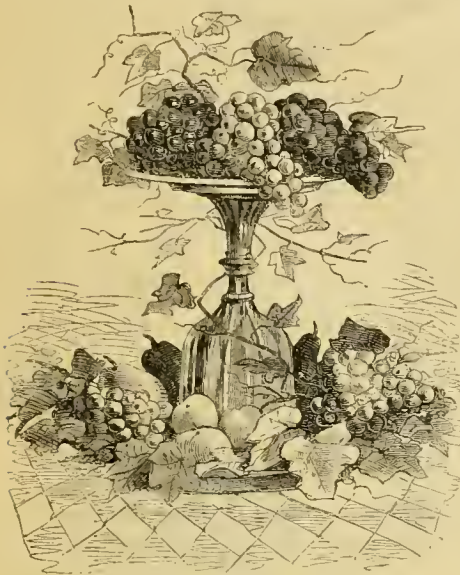
yellowish green. This pale green variety had a decidedly different flavor from Conover's Colossal, which was tried in comparison with it.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

The Table—Order and Ornament.

An article, and a long one, in a Western journal, has afforded us much amusement. The editor advocates eating with the knife instead of the fork, and gives as a reason, that his father ate with his knife. Now, we do not pretend to discuss the importance of the usages of good society. Suffice it to say that there are certain things which are conceded. Among those whom all will admit to be persons



ORNAMENT OF FRUIT.

whose opinions are to be respected—for their intelligence, their virtues, and their refinement, but not their wealth—it is the custom to remove the hat when entering the house, it is the custom not to spit upon the carpet, it is the custom not to clean the nails in company, and it is the custom not to do and to do many things which distinguish a person unused to the ways of good breeding from one who has been properly brought up. The use of the knife to convey food to the mouth is considered an impropriety at a well-ordered table. Now, we do not intend to argue the point, any more than we shall argue the necessity of one's combing the hair or cleaning the nails! That mysterious thing called "Society" has ordered that the hair should be smoothed, and that the nails should be put out of mourning, and that food should be taken with the fork.—In these days of fruits what grand opportunities there are for making table ornaments! Fruit serves for other purposes than to gratify the palate. Indeed many fruits seem to us more beautiful to look upon than they are pleasant to eat. Fruit pictures please most people, and yet every one can make a fruit picture daily. The variety of forms and colors, and the ways in which it is possible to arrange them, make fruits, after flowers, the most desirable of table ornaments. Then, the two can be combined, and make something more pleasing than the most cunning artist ever painted. An elevated dish, that is, a dish upon a foot or stand, is most effective in setting off a table, whether it be used for fresh or preserved fruits, cakes, or other things. Such dishes, in glass or crockery, may be had at a small price. In the absence of such a dish we recently saw one extemporized by using a soup plate, a celery glass, and a smaller plate. The celery glass was inverted in the soup plate, and the smaller plate placed on top of the glass, as in the figure. In arranging fruit, grape leaves will be found to be a great aid, and some of the tender shoots with tendrils can be introduced with fine effect. Make a good bed of leaves to receive the fruit, allowing these to hang over and conceal the edges of the plates; then put in the fruit as tastefully as possible—bright side out—placing the large

below, and finishing off with the smaller. If flowers are used with the fruit, do not let them be of gaudy colors, as they will detract from the general effect. Use a plenty of green leaves, for these are the natural foil to the colors of the fruit.

Framing a Picture.

BY COUSIN RUTH.

I give you my way for making cheap picture-frames for my common rooms. It is most suitable for small pictures, like magazine plates or even card photographs. First, procure a piece of stiff pasteboard (for the back), and a glass,—both cut the size of the picture you wish to frame. An old box will furnish the pasteboard, and, at a trifling cost, you can have a broken pane of glass cut to the required size. On the back of your pasteboard, sew two rings or small pieces of tape, one on each side near the edge, and about one-third the height from the top of the picture. Then put the glass over the picture, the pasteboard behind it, and, holding the edges firmly together, paste over them a piece of white paper or cloth, to hold them securely. When this is dry, cover it (binding the edge) with a strip of brown or other colored paper, such as is used to cover boxes, etc., or gilt paper. These can be procured at any fancy store for a small sum, and a sheet will serve for a number of pictures. Be sure that the edge of the paper, where it meets the glass, is perfectly straight, also that the corners are joined neatly. A great addition to many pictures is a narrow strip of gilt paper inside the dark, to imitate a gilt moulding. This, of course, is narrower than the dark paper, and the width of both should depend upon the size of the picture. Now, fasten your cord to the rings on the back; the color of the cord should match the prevailing tint of the room. A frame made of straws is very neat, although less durable. Those covered with cones, shells, leather-work, etc., are pretty, but they will catch the dust. Mine are durable, plain, and neat.

A Talk with the Girls about Housekeeping.

BY AUNT PRUDENCE.

My dear *Girls*, you that read the *Agriculturist*, and want to profit by all its good articles on housekeeping, will you listen to a little more advice on the same subject, even if it is given by an *old woman*? May be you don't have as many odd thoughts about such things as I had when a child. It seemed to me there was a great mystery about it, that a knowledge of it was gradually imparted to us as we grew older, without any effort on the part of the receiver; and, as my childish memory was so poor, I often wondered how it was that our dear mother should always keep a supply of bread just as we wanted it (and such good bread too!); how she could think to fill the cake jar that we emptied so often, besides making a great variety of preserves, and other good things that suited our appetites so well. It seemed to argue so much forethought and knowledge on her part that we often wondered how it would seem to be grown, keep house, and have so much to do, plan out, and think about. I have had to learn life's lessons step by step, and to wade through its cares and troubles. I advise you to learn as much as possible while you are still under a mother's eye, so that when you assume the care of a house, it may be with a perfect knowledge of all its requirements. In these days of personal independence, it is so very difficult to get servants who are really *help*, that it is very important for the mistress of the house to know how all its work should be done. In nine cases out of ten, she must do it herself if she wants it properly done. These responsibilities fall with a crushing weight on an inexperienced head, while one who has been accustomed always to attend to such things regards them only in the light of pleasant duties. You will probably all be housekeepers if you live, and you must begin now, and see how the plain every-day work is done. It all seems very simple, while your mother, or

may be Bridget, is doing it, but take hold and see how you can do it yourself. All the fine theories in the world will not perfect you without practice. You will find that there are many things that you think you know all about, but when you try to do them, you will have to ask "dear mother." I think there is a twofold blessing that attends our early efforts to learn, and help others. In the first place we lighten the burdens of a parent, perhaps overtaken, and, secondly, we acquire knowledge that will be a benefit in all after-life. One of the brightest memories of my early home is, that my beloved father (long since called to a heavenly rest), whenever he wanted a garment mended, used always to ask *me* to do it for him, although I was not an only daughter. And many times since, when I have had a great deal to do, I have thanked a dear mother for early teaching me. So remember all the small things, as well as the large; mending is just as important as making; and good bread, good butter, and well cooked meats and vegetables, are more important than an extra fine dinner or a splendid supper on great occasions. I certainly wish you to have a good education, as regards book learning, yet I am desirous that you may also know all about housekeeping, so that you may understand how to do, in the *best* and *easiest* way, everything you may be called to do as a wife. If you profit by the few hints I have given, you will thank me at some future day, when your household knowledge will enable you to direct with ease a family who will rise up and call you blessed.

Household Talks.

BY AUNT HATTIE.

Edward's mother has been paying us her usual two weeks' visit. She is an energetic, earnest-minded, active, practical, intelligent woman, a thorough housekeeper, an excellent manager, and, withal, a kind instructor and friend. I have long been indebted to her for many of the ideas which have, perhaps imperceptibly, shaped and moulded the foundation and structure of my domestic relations and duties. I have often thought that, if young people would be more willing to be guided by the advice of older and more experienced persons, the world might advance even more rapidly than it does at present, in all matters relating to health, comfort, and happiness.

MUTTON CHOP.—It was she who taught me how to cook mutton chops, so as to have them tender, juicy, and delicious. I had been in the habit of placing them in a cold spider, covering with a lid, and leaving them to fry on the fire at their leisure, and, occasionally, for convenience, putting them to bake in the oven, with a little water in the pan, thus making good gravy, but poor meat. Her way, and the one which I now invariably follow, is this: Put a perfectly clean spider on the fire, let it get hot, then put in a tablespoonful of clear dripping, lard, or butter, free the chops from skin and loose fat, (if from the ribs, I cut off the upper thin portion,) and place these in the spider or pan first; pepper and salt the remaining portion, and put one or two only, at one time, into the boiling fat. Be sure to turn them before the juice has time to start through the upper pores. After they are turned, if the fire is very hot (and it should be so), the lid of the stove may be placed under the spider, and the chops may be allowed to cook gently for a few minutes. The object of putting the chops into very hot fat is, that the surface of the meat shall immediately sear and shrivel, so as to prevent the escape of the juices; and the object of turning them soon is to prevent the juice or red gravy from oozing through the upper surface. When the two surfaces are sealed, the slower the process of cooking the inside portion, the better, provided the heat is sufficient to congeal or cook the albuminous part of the juice. [If people will *fry* mutton chops, Aunt Hattie gives the best way to do it, but we should never treat a good mutton chop to anything but a gridiron and a lively fire.—Eds.]

PUDDING SAUCE.—In the June number of the

Agriculturist, a friend from Illinois wishes recipes for pudding sauce, calculated to agree with a digestion less delicate than that of an ostrich, and composed of articles readily obtained by farmers. I propose, for his benefit, to give a few wholesome and agreeable sauces, which may be made of things which are or should be found in the pantry of every farmer in the land—flour, butter, sugar, nutmeg, and water—nothing more than these. For hunting, plum, spice, Indian meal, or suet pudding, a sweetened drawn butter is sufficient. This is made of two heaping tablespoonfuls of flour, and one small tablespoonful of butter, blended smoothly with a little water, and poured into a half pint of boiling water, simmered gently, and stirred to prevent burning. Add sufficient sugar to sweeten properly. For apple-pudding, Yorkshire pudding, apple or plain fritters, boiled batter pudding, or warm apple pie, use sweetened cream and sugar, or two tablespoonfuls of butter, beaten and whipped with a small teaspoonful of fine white sugar, until creamed or foamy. This sauce should be served on a small plate, ornamented with a little grated nutmeg, and indentures made with the handle of a spoon. A teaspoonful or two, only, is supposed to be all that is required for one person.

RASPBERRY VINEGAR.—No housekeeper who has the means at her command should neglect to put up a few bottles of raspberry vinegar. Two tablespoonfuls of it added to a tumbler of ice-water makes a pleasant and healthful beverage. It is very easily made: To two quarts of raspberries, slightly bruised, add one quart of good vinegar, and let it stand overnight; strain through a flannel bag, and to one pint of juice allow one pint of sugar, and heat until the sugar is dissolved; bottle and cork for use.

BOTTLED RASPBERRIES.—I much prefer preserved raspberries to strawberries; with me they have always retained their flavor, been less watery, and the color has been much superior to that of strawberries. I never put water to raspberries. A quantity of juice will usually flow from them, which may be used with a little sugar for a commencement; when putting the fruit into the first one or two bottles, leave enough juice for another quantity of berries, and so on, until all are taken.

BAD LUCK WITH JARS.—This afternoon, Mrs. C., a neighbor of mine, was in. She has always professed a good deal of admiration for my bottled peaches, raspberries, etc., so this spring I persuaded her to invest \$2.50 in a dozen bottles of quart self-sealing jars, and when strawberries were at the height of the season, she put up a few quarts, filling five or six of the bottles. To-day she discovered that the fruit had fermented, and the lids slipped from the mouths of the jars. Not knowing what to do with the preserves, and feeling, too, I fancy, a little indignant at me for getting her to try the new process, she hurried over to tell me about it. As soon as she had taken a seat and slipped off her sun-bonnet, she said, "My strawberries have popped." "Indeed!" I said, "Why, how could that have happened?" "I don't know; I put them up just as you said." "Did you have the fruit boiling while you ladled it into the jars?" "Certainly I did; and used a hot teacup, too." "And did you put the lid on immediately?" "Yes; and did one bottle at a time." "Well, then," I said, "I am at a loss to account for the occurrence; no one had meddled with the lids, had they?" "Why, what harm would that do?" she said. "Oh, that would spoil the fruit, of course; you would let the air in again." "Why, I never thought of that; and now I guess I am to blame after all. You see, when the bottles were nearly cold, I noticed that they were not quite full, and you said that if the bottles were not full, the fruit would spoil; and as I had some of the preserves left, not quite enough to fill a jar, I opened the others and filled them all up. It is too bad, but I shall know better next time." After a little more conversation, in which I advised with her what to do with the fermented jars, she went home, resolved, as she said, never to meddle with the lids of her self-sealers again. I am acquainted with a young lady, who, after doing up a quantity of fruit for her mother, inserted the

point of a penknife between the rubber and rim, for the purpose, as she told me herself, of letting out the air. Of course she let air in, and her fruit all spoiled. After the lids of self-sealing bottles are properly adjusted, they should not be removed or re-arranged, or in any wise meddled with until such time as it is desired to use the contents.

Wheat and Corn Bread.

BY MRS. J. S. PEARSALL.

I take a quart bowl, put in it one teaspoonful of sugar, one-half teaspoonful of ginger, $\frac{1}{4}$ teaspoonful of salt, and saleratus the size of a large pea; fill the bowl half full of boiling water; when cool enough not to scald the flour, add enough flour to make a thick batter; set the bowl in warm water to rise; if the batter gets thin I add more flour. It usually takes about six hours to rise. I let it stand until the bowl is full, and then set the sponge by adding the yeast so made to one quart of milk-warm water, and stir in flour to make it sufficiently thick. Let it stand in a warm place one hour, or until sufficiently light, then mold into loaves and let them stand $\frac{3}{4}$ of an hour; then bake in a moderate oven one hour. This is my method of making wheat bread.—When I make corn bread I leave two tablespoonfuls of yeast in the bowl; add a teacupful of warm water; thicken with flour, and let it rise. This will occur in about one hour. I then take 4 quarts of corn meal, wet with boiling water, and let it cool. Then add the yeast, one-half teacupful of sugar, one saucerful of flour, one-half teaspoonful of saleratus, one full teaspoonful of salt; stir it well, let it rise one hour, and then bake in a hot oven an hour and a half. If the crust is likely to get too brown, I cover with paper, or with a tin plate. I bake it in a pan. When my bread is done I rub a little butter on the top crust, and cover with a cloth until cold. I never fail of having good bread when I have good flour.

Children's Dress.

BY MRS. LUCY LAMB.

I was lately reading from a New England paper, an appeal in behalf of a more comfortable style of clothing for little girls, and was surprised at the statements of the writer, that children in that severe climate could be permitted by their foolish and heartless mothers to go out with their short dresses, and their poor little purple extremities barely shielded from the inclemency of New England winter weather, by a single thickness of linen. It seems incredible. So much for a foolish woman's idea of fashion! What wonder that so many of the poor little abused creatures die in childhood! What strong, healthy man could endure such exposure? Much less frail little girls. What wonder that the few who survive such treatment and grow up to womanhood, pine and fade at the first real hardship! And it is all so unnecessary. There is no good reason why little girls should not be dressed as warmly as little boys. They are out of doors very nearly as much, and surely ought to be as thoroughly protected from the cold. And they can be dressed prettily, too. It costs no more to dress a little girl in flannel throughout, with warm flannel underwear, skirts, waists, dress, and thick warm stockings, than to dress her in flimsy finery, fit only for summer wear. Then there is a saving in the item of washing and ironing, not to be overlooked, to say nothing of the child's comfort and health, which ought to be the first consideration.

I know a family of little girls, rosy-cheeked little misses, pictures of robust health. Their mother is not rich, but she is sensible, and dresses her daughters quite as warmly as her sons. Their underclothing is made of thick warm flannel, soft and agreeable. The drawers are made to fasten with a band around the top of the stocking, which is thick and warm. The underskirt is thick flannel, with a flannel waist. The arms are protected by flannel sleeves and the wool dresses have the waist and sleeves lined with flannel. There is no

greater fallacy than to suppose that the arms need less protection than other parts of the body. Many women line their dress sleeves with very thin material or none at all. This is wrong. The sleeves of winter dresses should be lined with flannel or other warm goods. Then have a thick warm jacket or sacque, for cold days, or for unusual exposure. I made a very nice one out of a pair of pantaloons which had been thrown aside by a gentleman. The knees and other parts were worn threadbare, and yet, when finished, it was so stylish that when wearing it for a riding habit, as I did all last spring before the weather became warm enough for horseback exercise without it, I was complimented by a very fashionable lady on my "elegant new sacque." She never surmised where it came from, and it cost not one cent. Women and girls who are exposed to the weather ought to be as well clad as men and boys. Why not? The girls have the same exposure in going to school, in skating, and other exercises as their brothers, and should have as thorough protection. If Mamma thinks she has nothing wherewith to make a warm jacket or sleeved waist for Susy, let me hint to her to hunt through the closets and see if there is not some old coat or pair of pants of Papa's or Brother Harry's, which is of no use to them, and that when ripped and washed and turned inside out, and bottom upward, and pieced a little here and neatly darned there, will make just the nicest and prettiest jacket, especially with the addition of a little bright-colored alpaca braid, which will cost but a trifle, and how comfortable and warm the dear child would be!

Hints on Cooking, etc.

More about Popping Corn.—We have given some methods of popping corn. We add one more from Mrs. E. M. B., Pattersonville, La. In a few months these can be put to the test. She says: "I think I can give a better recipe for popping corn than either of those I have seen in the *Agriculturist*. Take a heaping tablespoonful of lard to a pint of pop corn, and put both into a pot together, stirring steadily until the corn begins to pop, by which time it will have absorbed the lard; the lid should then be placed on the pot, to be removed for an occasional stir. If the corn should not pop so well, by this process it will be much more crisp, and will be made delicious by having a small quantity of sugar candy poured over it while the candy is hot, the corn being well stirred so that each grain shall be slightly coated."

Pudding Sauce.—Mrs. A. C. Smith, Fitchburg, Mass. Beat well together one cupful of white or nice brown sugar, one tablespoonful of corn starch, and a little salt; then add one pint of boiling water and let it boil; after taking from the stove, add butter and nutmeg to suit the taste.

Poor Man's Rice Pudding.—Two qts. of rich milk; half a pint of raw rice, well washed; half a pint (or more) of sugar; a piece of butter the size of an egg, and a little salt. Flavor with nutmeg. Bake slowly from $1\frac{1}{2}$ to 2 hours. Stir occasionally during the first hour, to prevent the rice settling to the bottom.

Crackers.—Mix in two quarts of flour, one cup of butter, three teaspoonfuls of cream of tartar, salt, one and a half teaspoonfuls of soda, well incorporated, then add one pint of water; beat with the rolling pin, cut and prick, and bake on a tin, or oven bottom, with a slow fire. The same recipe is used by some without the cream of tartar, and a little sweetening may be added.

Carrot Pie, properly made, is a good thing, but poorly done it is a shabby apology for a pie. Who will give a recipe known to be reliable?

Sweeping Floors.—"J. R. S." writes: "Persons having bare floors to sweep, such as public halls, stores, etc., will find that by taking pine sawdust, wetting it thoroughly, and after pouring off all the water not absorbed, sprinkling the floor slightly with it, they may not only sweep very clean, but make scarcely any dust. Try it."

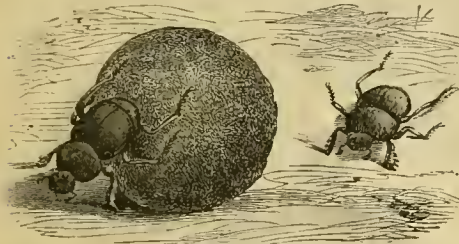
BOYS & GIRLS' COLUMNS.

A Six-legged Teacher.

BY FRANCIS FORRESTER.

"A six-legged teacher! Pshaw! Who ever heard of such a thing!" exclaims the young reader, wondering whether the title to this article is a jest or a sober statement. Boys and girls should never cry "Pshaw!" at things they do not understand, lest older and wiser folks laugh at their ignorance. The earth is full of wonderful things, and those who walk through it with their eyes open may learn lessons from creatures with six legs, or four legs, or no legs, as well as from those having only two legs like themselves. My six-legged teacher is a *big beetle*. When you know more than you do now, you will find him to belong to a very respectable family of "big bugs," or beetles, named *Scarabeus*. At present, I will give him a less classic but more common name, and call him a Tumble-bug beetle! Don't be offended with him because I give him such a plebeian name. Read on, and you will say he is a capital fellow in spite of his name. But just here it occurs to me that my six-legged teacher ought not to be called *him* at all, for she is a lady and not a gentleman beetle. No matter, however; her lesson is just as valuable as though it had been taught by her husband.

One day this lady beetle placed one of her eggs in a pellet of dung, so that she might bury it where it would be safe. To prevent the wet from making the pellet soft, the faithful mother pushed it up a little hillock, and then let it roll down. This she repeated several times, until, by some mistake, she let it roll into a hollow spot. From this she was unable to remove it, though she worked like a member of the Try Company in her endeavors to do it.



THE TUMBLE-BUG.

What then? Did she give it up? Not she. It takes poor, spiritless boys and girls to give up to difficulties. Insects have more pluck than such weak-willed little folks. So my beetle, finding her work beyond her own strength, started off at a round pace to a neighboring dung-heap in search of help. In a few moments she returned with three sister beetles. All four of them then gave a push, a strong push, and a push altogether. The pellet of dung could not resist their united strength. It went up in a moment or two, to the level ground. The three helpers went back to their home in the dung-heap, and Mrs. Tumble-bug soon rolled her pellet into a snug little nest in the ground, where her egg might safely hatch in due time. This curious fact was observed by a German artist in Italy. It may be found quoted by Kirby and Spence in their chapter on the instincts of insects.

"Hurrah for Mrs. Tumble-bug!" I hear you cry. That's right. She is worthy of three cheers. Let them ring out heartily. Then go and prove them to be true, honest, cheers, by sticking to your work as pluckily as she stuck to hers. Whether your work be doing a hard sum, hoeing a hard row, weeding a hard spot of garden ground, or any other hard thing, *keep trying to do it until it is done*. That is the lesson of my six-legged teacher. How do you like it?

There is another lesson taught by her three sisters. When she told them her trouble they did not jeer, or mock, or grumble, but they started at once to help her. I wonder if every reader of the *Agriculturist* can say, "That's the way I always do. I am never selfish enough to refuse aid to my brother or sister." I wonder if it is so. I fear not, and therefore, I beg you to profit by the good example which these Tumble-bug beetles gave you when they so cheerfully helped one another.

The Old Man of the Mountain.

Little Paul lived in a cottage crowded under the cliff, a queer old house, black and weather-beaten, with peaked, moss-grown roof, low, overhanging eaves, and narrow windows, close-latticed with little panes of glass. But once inside the creaking door with its rusty latch and huge hinges, you could n't help feeling that it was a cosy home, for everything within wore an aspect of quiet comfort, from the old clock that ticked in the corner to the old cat that purred on the hearth. True, there were only three rooms in it, and none of them very big, and the ceilings were left unplastered and the beams bare,

and the furniture was quite old-fashioned. Yet, somehow, there seemed around the straight-backed chairs and chintz curtains, and rag-carpeted floors, a snug appearance which pleased all who entered. As for little Paul, his private opinion was that no palace in all the land could be half as nice as his own home; for where else could he rummage such crannies and corners, watch the swallows build nests under the eaves, play ho-peep in the attic, and above all, where could he have such a splendid view of the Old Man of the Mountain?

The Old Man of the Mountain? who was he? Not anybody who lived up there on the top of the storm-swept cliff, where there was snow eleven months in the year—not any *live* man at all; but a huge, strange likeness to a human side-face, which you could see jutting out from the side of the mountain, a mile up the ravine. It was a startling likeness, too. There was the forehead, high and noble, and under it the depression for the eye; there was a nose, straight and perfectly drawn, a pair of lips, thin, but distinct; a chin with its carved line turning down toward the throat; all forming so decided an outline of a man's profile as to startle every one who glanced at it. It was a noble-looking face, as if drawn after the portrait of a good man. A calm, benignant aspect sat upon it, and it seemed to be gazing over the white houses of the village and the green fields of the valley, like a father bestowing a blessing on his children.

The Old Man of the Mountain was not to be seen from every spot in the valley. Directly in front, you might look up the cliff and find no sign of a human face. But as you went down the ravine, following the crooked road, the likeness suddenly leaped out of the landscape. Just in front of little Paul's house was the spot where it was most distinct, and people who had journeyed from afar to see the curious face, frequently asked the privilege—always willingly granted—of looking at it from the window up stairs, Paul's little room. And all agreed that there, at that window, the Old Man appeared to the very best advantage; nowhere else was the countenance quite so clear, and grand, and noble.

Paul found unalloyed pleasure, when every other enjoyment failed, in gazing at the Old Man of the Mountain. His mother said that while an infant in her arms he noticed the likeness, and pointed to it and to his dead papa's picture on the wall by turns, with his chubby little finger. He became more and more acquainted with it, and would sometimes sit quiet half an hour—a long time for a little child—gazing at it from his high chair by the window. As he grew from babydom into childhood he still loved to look on that magnificent profile, until it almost seemed as if there was a sympathy between them, and the stone face returned his earnest gaze. He could scarcely tell when he thought it most interesting, whether in the early morning, when the gray mist rolled slowly up its face, and the first sunbeams played around its brow; or at sunset, all bathed in molten glory from the radiant clouds; or when the moon cast across it melancholy gleams. He loved it in all its moods of shadow and sunshine, of peace and storm. Others might think it always the same,—cold, stony, unchanging; but to Paul's eye, at different times it wore a varied expression, sometimes smiling, sometimes sad, at times looking down in peace, at times almost in anger.

There would occasionally come to the village a visitor, who, people said, resembled the Old Man of the Mountain. But Paul never saw one that he thought worthy of comparing to that grand face. The nearest likeness, he thought, was an old print of General Washington, which hung in his mother's room; but even *he*, whom his mother revered above every man on the earth, and under whom his father had fought in the Revolution, Paul thought not so noble as the Old Man of the Mountain.

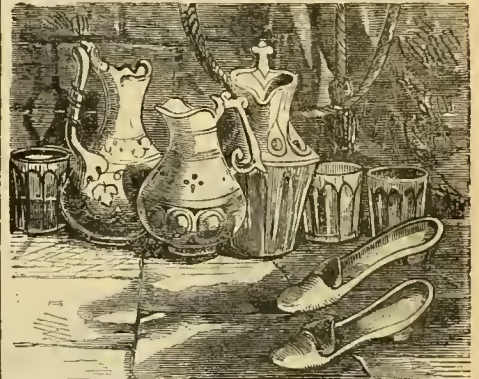
Time sped away, and Paul, who had grown from child to boy, was now almost a man,—handsome, studious, and thoughtful still. One day a gentleman passing by was attracted by his bearing and good looks, talked with him an hour, and then took him away to a place at his store in the city. The tears that fell that day came not all from the widow, nor yet from the farmer's pretty daughter up the valley. As Paul rode away and the road turned, shutting off the view of the cottage where an aged woman stood alone, and the cliff with its chiseled face, there stood a tear on the young man's cheek.

Two years have rolled on, and Paul returns to cheer his mother again a few weeks, and then to take away with him the maiden in the vale as his little wife, for he is now established in trade, known and honored as a rising young man. But as he enters the town, almost everybody says, "How much our Paul looks like the Old Man of the Mountain!" Sure enough, there was the same high forehead, the same grandly carved features, the same kind, generous, high-souled aspect. He had gazed on the mountain-face from infancy, and now the look of that face was stamped upon his own. And in after-years, as often as he returned to visit his early friends, the look deepened and grew to a still closer resemblance.

That is the story. Will you stay to learn its lesson? It is that those with whom we are in closest and most constant meeting will have an influence over us to imprint their likeness on our lives and characters. Live with the bad and there are a hundred chances to one, that you will become like them; choose the good as your associates and you will be made better by them. Whether in life or in books, in examples or associations, then, we should seek out the noble, the wise, the true.

New Puzzles to be Answered.

Conundrum.—If you name it you break it. What is it?



No. 353. *Picture Conundrum*.—How does this represent girls in their first attempts at skating?



No. 354. *Picture Conundrum*.—Why are neither of these parents likely to want for beer?



No. 355. *Picture Puzzle*.—The wood demons—where are they?

Answers to Problems and Puzzles.

Jesse Edmonston (2), S. I. Dunn, F. W. Wilson (1), T. H. J. (1), Ellen S. Hart, Louis E. Shriver (2), Ginnie Richardson, J. Milton Ross (2), Fidelia R. Lord (2), Jennie A. H. (2), D. W. B. (1), W. H. E. (3), Lida W., Grace, H. and J. Bromley, H. A. Drury, Lizzie Wilbur, S. S. Nash, S. W. Baker (2), S. M. Peachey (2), Chas. C. Hatchard, C. A. Dirr, J. Milton Snyder, D. Webb, Jr., George H. Taylor, J. G. L., Allie Shuler, Jacob White.



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JOLLY COMPANIONS.—FROM A PAINTING BY PROF. J. SCHRADER.—*Drawn and Engraved for the American Agriculturist.*

The beautiful little house-pet, called King Charles' Spaniel, is one of the smallest of the Spaniels. The pure breed weighs but about six or seven pounds, and sometimes only five, and even less. It receives its name from Charles the Second, of England, who first brought it into notice. He delighted to be accompanied by these little dogs in his walks, and made them his companions in his bedchamber, and even in his bed. They are very intelligent, and are easily taught to perform amusing tricks. They will search for game, and can be taught to play "tag" with boys, apparently taking as much pleasure in the game as their two-legged playfellows. A King Charles' Spaniel, belonging to an English gentleman, would watch his opportunity to give a slap at the family cat, hiding behind the door-step or in some sheltered place, and waiting until she came quietly along unconscious of danger. Then, suddenly, he would jump out upon her, much to her disgust. Before poor kitty could recover her presence of mind he would scud away; she

soon following him upon three legs, and holding the other ready to give him a cuff. One little Spaniel would regularly, every morning, bring his mistress a towel and brush, and wait to be washed and combed. When his mistress spent the day away from home, she would tell him to take his dinner at the rectory, which was a considerable distance away. He never failed, however, to report himself on time, and to return in the evening. A small Spaniel belonging to Dr. Wood, the naturalist, finding a bird's nest, and getting a taste of the eggs, was delighted with his discovery. In trying to get them out of the nest he broke them, and thus lost much of their contents. To avoid this, he bit a hole through the bottom of the nest, and permitted the eggs to drop unbroken into his mouth. These little dogs are good watch-dogs in a house, as they keep up a sharp and continued barking if any person comes near the house.

How touching the motherly love and pride of the Spaniel, as expressed by the artist, in the fine picture illustra-

ting this page! She seems to enter fully into the delight of her young master, as he caresses her little pup.

Why is fashionable society like a warming-pan? Because it is highly polished, but very hollow.

"Oh! where do you get the red for your cheeks?" said a pale, wan young lady to a bright, laughing minx. "Where the roses get theirs—in the air and sunlight," was the quick reply.

A little boy and girl, each probably five years old, were by the roadside. The boy became angry at something, and struck his playmate a sharp blow on the cheek, whereupon she sat down and began to cry pitiously. The boy stood looking on sullenly for a minute, and then said: "I did not mean to hurt you, Katie; I'm sorry." The little rosy face brightened instantly, the sobs were hushed, and she said: "Well, if you are sorry, it don't hurt me."

"THE BEST JUVENILE MAGAZINE EVER PUBLISHED IN ANY LAND OR LANGUAGE"

OUR YOUNG FOLKS.

The great popularity which OUR YOUNG FOLKS has enjoyed from its commencement seems increasing steadily and surely every month. Its hundreds of thousands of readers all find something to their liking in each number. The Conductors of the Magazine make a constant study of the tastes and best interests of the young people of the country, and, availing themselves of the almost unlimited resources at their command, they provide monthly a variety that must entertain and benefit all classes of readers. They furnish excellent Stories, graphic Sketches of Travel and Character, new and attractive Chapters of History, fascinating descriptions of some kind of Animals or Plants, practical articles of great value for the everyday life of all, and departments of Entertainment and Correspondence full of fresh and delightful attractions. All these are contributed by the best writers, and their articles are profusely illustrated by the most skillful artists.

Mr. ALBERT'S "Story of a Bad Boy" has attracted universal attention and interest. From the August number we copy an extract describing the appearance of

SAILOR BEN AT RIVERMOUTH.

"Hullo!" cried Pepper, dropping his hands. "Look there! Is n't that a bark coming up the Narrows?"

"Where?"

"Just at the left of Fisherate Island. Don't you see the foremast peeping above the old derrick?"

Sure enough it was a vessel of considerable size, slowly beating up to town. In a few moments more the other two masts were visible above the green hillocks.

"Fore-topmasts blown away," said Pepper. "Putting in for repairs, I guess."

As the bark lazily crept from behind the last of the islands, she let go her anchors and swung round with the tide. Then the gleeful chant of the sailors at the capstan came to us pleasantly across the water. The vessel lay within three-quarters of a mile of us, and we could plainly see the men at the davits lowering the starboard long-boat. It no sooner touched the stream than a dozen of the crew scrambled like mice over the side of the merchantman.

In a neglected seaport like Rivermouth the arrival of a large ship is an event of moment. The prospect of having twenty or thirty jolly tars let loose on the peaceful town excites divers emotions among the inhabitants. The small shopkeepers along the wharves anticipate a thriving trade; the proprietors of the two rival boarding-houses—the "Wee Drop" and the "Mariner's Home"—hasten down to the landing to secure lodgers; and the female population of Anchor Lane turn out to a woman, for a ship fresh from sea is always full of possible husbands and long-lost prodigal sons.

But, aside from this, there is scant welcome given to a ship's crew in Rivermouth. The toll-worm mariner is a sad fellow ashore, judging him by a severe moral standard.

Once, I remember, a United States frigate came into port for repairs after a storm. She lay in the river a fortnight or more, and every day sent us a gang of sixty or seventy of our country's gallant defenders, who spread themselves over the town, doing all sorts of mad things. They were good-natured enough, but full of old Sancho. The "Wee Drop" proved a drop too much for many of them. They went singing through the streets at midnight, wringing off door-knockers, shining up water-spouts, and frightening the Oldest Inhabitant nearly to death by popping their heads into his second-story window, and shouting "Fire!" One morning a blue-jacket was discovered in a perilous plight, half-way up the steeple of the South Church, clinging to the lightning-rod. How he got there nobody could tell, not even blue-jacket himself. All he knew was, that the leg of his trousers had caught on a nail, and there he stuck, unable to move either way. It cost the town twenty dollars to get him down again. He directed the workmen how to splice the ladders brought to his assistance, and called his rescuers "butter-fingered land-lubbers" with delicious coolness.

But those were man-of-war's-men. The sedate-looking craft now lying off Fisherate Island was n't likely to carry any such cargo. Nevertheless, we watched the coming in of the long-boat with considerable interest.

As it drew near, the figure of the man pulling the stroke-oar seemed oddly familiar to me. Where could I have seen him before? When and where? His back was towards me, but there was something about that closely cropped head that I recognized instantly.

"Way enough!" cried the steersman, and all the oars stood upright in the air. The man in the bow seized the boat-hook, and, turning round quickly, showed me the honest face of Sailor Ben of the Typhoon.

"It's Sailor Ben!" I cried, nearly pushing Pepper Whitecomb overboard in my excitement. Sailor Ben, with the wonderful pink lady on his arm, and the ships and stars and anchors tattooed all over him, was a well-known hero among my playmates. And there he was, like something in a dream come true!

I did n't wait for my old acquaintance to get firmly on the wharf, before I grasped his hand in both of mine.

"Sailor Ben, don't you remember me?"

He evidently did not. He shifted his quid from one cheek to the other, and looked at me meditatively.

"Lord luv ye, lad, I don't know you. I was never here afore in my life."

"What?" I cried, enjoying his perplexity. "Have you forgotten the voyage from New Orleans in the Typhoon, two years ago, you lovely old picture-book?"

Ah! then he knew me, and in token of the recollection gave my hand such a squeeze that I am sure an unpleasant change came over my countenance.

"Bless my eyes, but you have growed so! I should n't have knowed you if I had met you in Singapore!"

Without stopping to inquire, as I was tempted to do, why he was more likely to recognize me in Singapore than anywhere else, I invited him to come at once up to the Nutter House, where I insured him a warm welcome from the Captain.

"Hold steady, Master Tom," said Sailor Ben, slipping the painter through the ring-bolt and tying the loveliest knot you ever saw. "hold steady till I see if the mate can let me off. If you please, sir," he continued, addressing the steersman, a very red-faced, bow-legged person, "this here is a little shipmate of mine as wants to talk over back times along of me, if so it 's convenient."

"All right, Ben," returned the mate, "sha' n't want you for an hour."

Leaving one man in charge of the boat, the mate and the rest of the crew went off together. In the mean while Pepper Whitecomb had got out his canner-line, and was quietly fishing at the end of the wharf, as if to give me the idea that he was n't so very much impressed by my intimacy with so renowned a character as Sailor Ben. Perhaps Pepper was a little jealous. At any rate, he refused to go with us to the house.

Captain Nutter was at home reading the Rivermouth Barnacle. He was a reader to do an editor's heart good; he never skipped over an advertisement, even if he had read it fifty times before. Then the paper went the rounds of the neighborhood, among the poor peo-

ple, like the single portable eye which the three blind crones passed to each other in the legend of King Aescius. The Captain, I repeat, was wandering in the labyrinths of the Rivermouth Barnacle when I led Sailor Ben into the sitting-room.

My grandfather, whose inborn courtesy knew no distinctions, received my nautical friend as if he had been an admiral instead of a common fore-castle-hand. Sailor Ben pulled an imaginary tuft of hair on his forehead, and bowed clumsily. Sailors have a way of using their forelock as a sort of handle to bow with.

The old tar had probably never been in so handsome an apartment in all his days, and nothing could induce him to take the inviting mahogany chair which the Captain wheeled out from the corner.

The abashed mariner stood up against the wall, twirling his tarpaulin in his two hands and looking extremely silly. He made a poor show in a gentleman's drawing-room, but what a fellow he had been in his day, when the gale blew great guns and the topsails waut-ed reefed! I thought of him with the Mexican squadron off Vera Cruz, where

"The ringing battle-bolt sung from the three-decker out of the foam,"

and he did n't seem awkward or ignoble to me, for all his shyness.

As Sailor Ben declined to sit down, the Captain did not resume his seat; so we three stood in a constrained manner until my grandfather went to the door and called to Kitty to bring in a decanter of Madeira and two glasses.

"My grandson, here, has talked so much about you," said the Captain, pleasantly, "that you seem quite like an old acquaintance to me."

"Thankee, sir, thankee," returned Sailor Ben, looking as guilty as if he had been detected in picking a pocket.

"And I'm very glad to see you, Mr.—Mr.—"

"Sailor Ben," suggested that worthy.

"Mr. Sailor Ben," added the Captain, smiling. "Tom, open the door, there's Kitty with the glasses."

I opened the door, and Kitty entered the room bringing the things on a waiter, which she was about to set on the table, when suddenly she uttered a loud shriek; the decanter and glasses fell with a crash to the floor, and Kitty, as white as a sheet, was seen flying through the hall.

"It's his wrath! It's his wrath!" we heard Kitty shrieking, in the kitchen.

My grandfather and I turned with amazement to Sailor Ben. His eyes were standing out of his head like a lobster's.

"It's my own little Irish lass!" shouted the sailor, and he darted into the hall after her.

Even then we scarcely caught the meaning of his words, but when we saw Sailor Ben and Kitty sobbing on each other's shoulder in the kitchen, we understood it all.

"I begs your honor's pardon, sir," said Sailor Ben, lifting his tear-stained face above Kitty's tumbled hair; "I begs your honor's pardon for kicking up a rumpus in the house, but it 's my own little Irish lass as I lost so long ago!"

"Heaven preserve us!" cried the Captain, blowing his nose violently,—a transparent dodge to hide his emotion.

Miss Abigail was in an upper chamber, sweeping; but on hearing the unusual racket below, she scented an accident and came ambling down stairs with a bottle of the infallible hot-drops in her hand. Nothing but the firmness of my grandfather prevented her from giving Sailor Ben a tablespoonful on the spot. But when she learned what had come about,—that this was Kitty's husband, that Kitty Collins was n't Kitty Collins now, but Mrs. Benjamin Watson, of Nantucket,—the good soul sat down on the meal-chest and sobbed as if—to quote from Captain Nutter—as if a husband of her own had turned up!

A happier set of people than we were never met together in a dinky kitchen or anywhere else. The Captain ordered a fresh decanter of Madeira, and made all hands, excepting myself, drink a cup to the return of "the prodigal sea-son," as he persisted in calling Sailor Ben.

When Sailor Ben's hour had expired, we walked with him down to the wharf, where the Captain held a consultation with the mate, which resulted in an extension of Mr. Watson's leave of absence, and afterwards in his discharge from his ship. We then went to the "Mariner's Home" to engage a room for him, as he would n't hear of accepting the hospitalities of the Nutter House.

"You see, I'm only an uneducated man," he remarked to my grandfather, by way of explanation.

CHAPTER XVI.

IN WHICH SAILOR BEN SPINS A YARN.

The following letter expresses fairly the opinion entertained of "OUR YOUNG FOLKS," as communicated in numerous letters to the Publishers.

TO THE EDITORS OF "OUR YOUNG FOLKS." SPRINGFIELD, Feb. 23, 1869.

"Your magazine is such a source of delight in our family, and at the same time so valuable and instructive to our children, that I feel impelled to write you and thank you for what you are doing for them and for others like them. We have taken the magazine ever since it started, but we think it more interesting than ever this year.

"The 'Story of a Bad Boy' pleases my boys so much that they fairly commit each instalment to memory. Mr. Trowbridge's articles on Glass-Making we have found particularly interesting, and so are the articles by Mr. Parton, and Mr. Hale, and Mrs. Agassiz. I assure you that the monthly arrival of your Magazine is a great event in our household. Expectation gets on tip-toe about the middle of each month, after which time the Post-office boy is closely watched by two pair of eager young eyes, on the lookout for what they call 'the best magazine that ever was.'

"In sober earnest, dear Editors, I feel that you are doing my children an inestimable good, that you are furnishing to them a style of reading in every respect admirable and particularly adapted to them; and as I see the interest with which they read what you prepare for them, and observe its restraining and developing influence upon their young minds, I feel grateful that in their education I have such a valuable assistant as your magazine.

Respectfully yours, Mrs. A. M."

"OUR YOUNG FOLKS" is only Two Dollars a year, and the numbers for January, February, March, and April, 1869, will be sent free to any one who wishes to examine the Magazine, on application to the Publishers,

FIELDS, OSGOOD & CO., 124 Tremont Street, Boston.

THE GREAT
DOLLAR MONTHLY:
WOOD'S
HOUSEHOLD MAGAZINE.

EDITION FOR JULY, - - - 106,000 COPIES!

Single Copies, 10 Cents; Yearly, \$1.00.

PREMIUMS FOR 1869:

- 1st. The Wilson Shuttle Sewing Machine—Price, \$40.00.**
- \$40.** We will give the Wilson Shuttle Stitch Sewing Machine, worth \$40 cash, as a Premium for forty new subscribers to the MAGAZINE. **\$40.**
- 2d. Pianos. Pianos.**
- \$450.** We will cause a Piano to be sent from almost any first-class manufactory, as a Premium for the retail price of it in subscriptions to the MAGAZINE. **\$450.**
- 3d. Cabinet Organs.**
- \$70.** We will give Cabinet Organs, worth from \$70 to \$150, as Premiums for their retail price in subscriptions to the MAGAZINE. **\$70.**
- 4th. Velocipede.**
- \$135.** We will give the celebrated American Velocipede, manufactured exclusively by A. T. Demorest & Co., 620 Broadway, New York, as a Premium for 140 new subscribers to the MAGAZINE. **\$140.**
- 5th. Tick. Tick.**
- \$35.** We will give a Coin Silver, Hunting Case, Elgin Watch (J. T. Ryerson movement), worth \$35 cash, as a Premium for 35 new subscribers to the MAGAZINE. **\$35.**
- 6th. \$5 Violins. \$5 Guitars. \$1 Fifes. \$4 Flutes. \$5 Accordions. \$20 Cornets. \$8 Tenor Drums.**
- We will give Violins, Guitars, Fifes, Flutes, Accordions, Cornets, Drums, etc., as Premiums for their retail price in subscriptions.
- 7th. Dictionary.**
- \$12.** We will give Webster's Unabridged Dictionary (latest edition), worth \$12 cash, as a Premium for fifteen new subscribers to the MAGAZINE. **\$15.**
- 8th. Microscope.**
- \$2.** We will give Microscopes as Premiums for their retail price in subscriptions to the MAGAZINE. **\$2.**
- 9th. Dickens.**
- \$5.35.** We will furnish Appleton's edition of Chas. Dickens' Complete Works in 18 Volumes (which is an aggregate of 4,655), worth \$5.35, as a Premium for eight new subscribers to the MAGAZINE. **\$8.00.**
- 10th. Waverley Novels.**
- \$6.25.** We will furnish Appleton's edition of the Waverley Novels, by Sir Walter Scott, in twenty-five Volumes, worth \$6.25, as a Premium for eight new subscribers to the MAGAZINE. **\$8.00.**
- 11th. Clothes Wringer.**
- \$9.** We will give the Universal Clothes Wringer, worth \$9, as a Premium for twelve new subscribers to the MAGAZINE. **\$12.**
- 12th. Demorest's Monthly Magazine.**
- \$3.** We will cause Demorest's Monthly Magazine, worth \$3, to be sent one year as a Premium for four new subscribers to our MAGAZINE. **\$4.**
- 13th. Demorest's Young America.**
- \$1.50.** To secure this valuable periodical it will only be necessary for you to ask two of your friends or neighbors to subscribe for Wood's HOUSEHOLD MAGAZINE, and forward us the amount with the addresses. **\$2.00.**
- 14th. The Phrenological Journal and Life Illustrated.**
- \$3.** We will cause the Phrenological Journal, worth \$3, to be sent one year, as a Premium for four new subscribers to the MAGAZINE. **\$4.**
- 15th. Church Union.**
- \$2 50.** We will cause the Church Union to be mailed one year as a Premium for four new subscribers to our MAGAZINE. **\$4.00.**
- 16th. Tribune and World.**
- \$2.** We will cause either the New York Weekly Tribune or the Weekly World, worth \$2, to be sent one year as a Premium for a club of three subscribers. **\$3.**
- 17th. Agriculturist.**
- \$1.50.** We will forward the American Agriculturist as a Premium for two new subscribers to our MAGAZINE. **\$2.00.**
- etc., etc., etc., etc., etc., etc.

Wood's HOUSEHOLD MAGAZINE.—Two years ago Newburgh gave birth to her sixth publication by S. S. Wood. It was first issued as a prospectus of a general book agency business, and has since been twice re-christened—first to "Wood's Household Advocate," then to "Wood's Household Magazine," its present title. The first number was in a small eight-page form at ten cents a year. It has since been enlarged four times, with subscription prices twenty-five cents, fifty cents, seventy-five cents, and one dollar. We learn that the back numbers are all soon to be republished in the present Magazine form. The success of Mr. Wood's enterprise is one of the marvels of periodical literature in these United States. From comparatively nothing it has grown to be one of the most extensive and important concerns of the kind in the country. The circulation of the HOUSEHOLD MAGAZINE is, we believe, exceeded but by one monthly in the country—Harper's. It is largely taken in every one of the thirty-six States, in all the Territories, in Mexico, Canada, Europe, etc., etc.

We attribute Mr. Wood's success largely to his attractive and novel way of getting before the people. The following card from the July number of his MAGAZINE will illustrate:

"A PARTNER WANTED EITHER WITH OR WITHOUT CAPITAL.—The business includes publishing and printing offices, and 'WOOD'S HOUSEHOLD MAGAZINE' (formerly Advocate), which has an edition of over one hundred thousand copies, and is the largest and best dollar monthly in the world! No individual of the male persuasion need apply, as I am a bachelor. For full particulars address S. S. WOOD, P. O. Building, Newburgh, N. Y. Post-masters and News-dealers throughout the United States are furnished with Specimen Copies."

Now to the best of our knowledge and belief, the lady who secures this partnership will be very fortunate indeed. We are personally acquainted with Mr. Wood, and know him to be an industrious and strictly temperate young man, etc. "Go in!" girls.—*Newburgh Daily Journal.*

What the People Say of Us, Etc.:

CLAYTON, Mich., June 1, 1869.
WILSON SEWING MACHINE Co., Cleveland, O.

Dear Sirs: I write to learn if S. S. Wood, of Newburgh, N. Y., publisher of Wood's HOUSEHOLD MAGAZINE, is responsible, and will do as he proposes in the way of premiums for getting subscribers for his paper. Among others he refers to you to learn of his responsibility.

Yours, respectfully, N. F. CHAFER.

[REPLY.]

Our acquaintance with Mr. Wood is entirely satisfactory. We have sent almost innumerable machines to all parts of the country as premiums to his agents. We have no hesitancy in recommending him.

Yours, truly,
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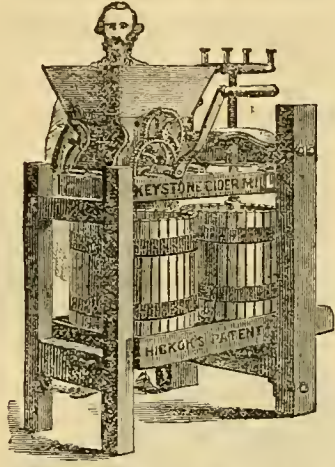
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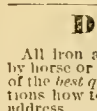
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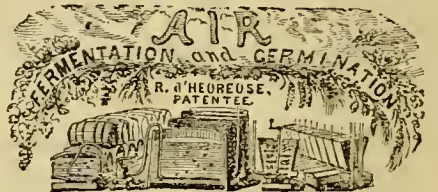
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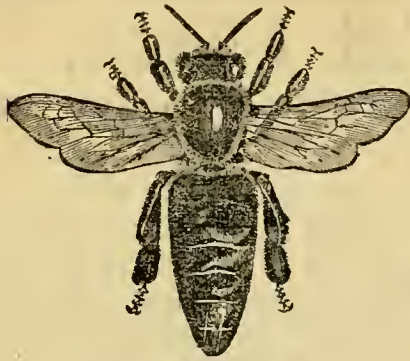
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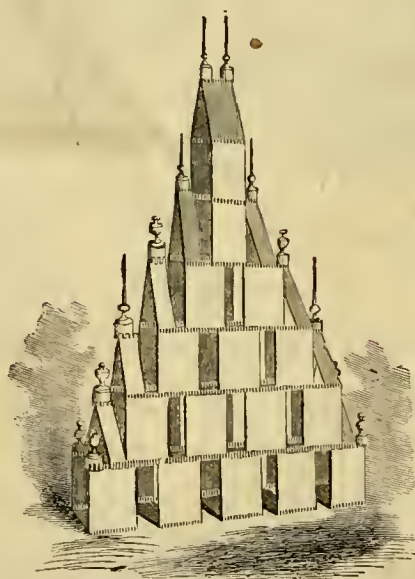
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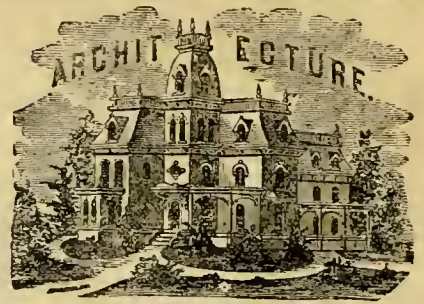
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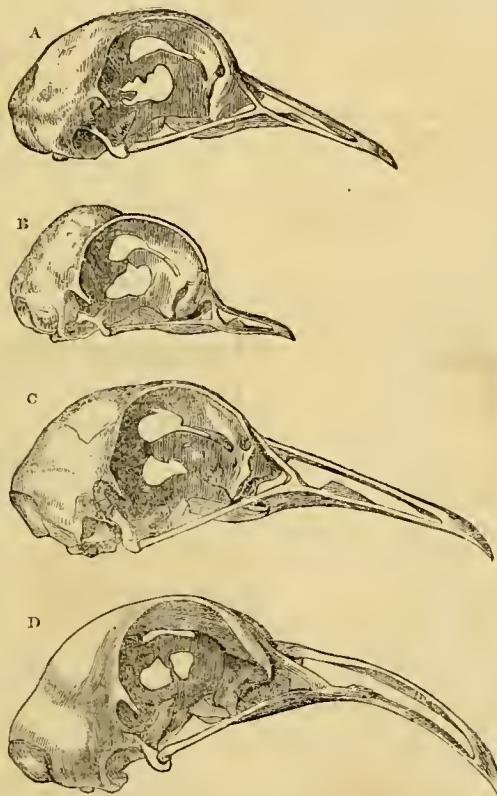
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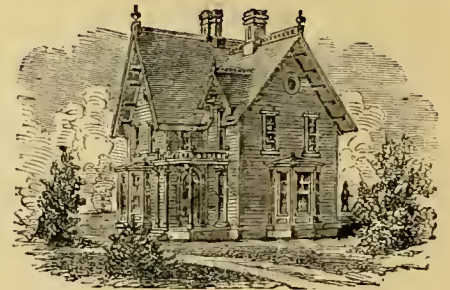
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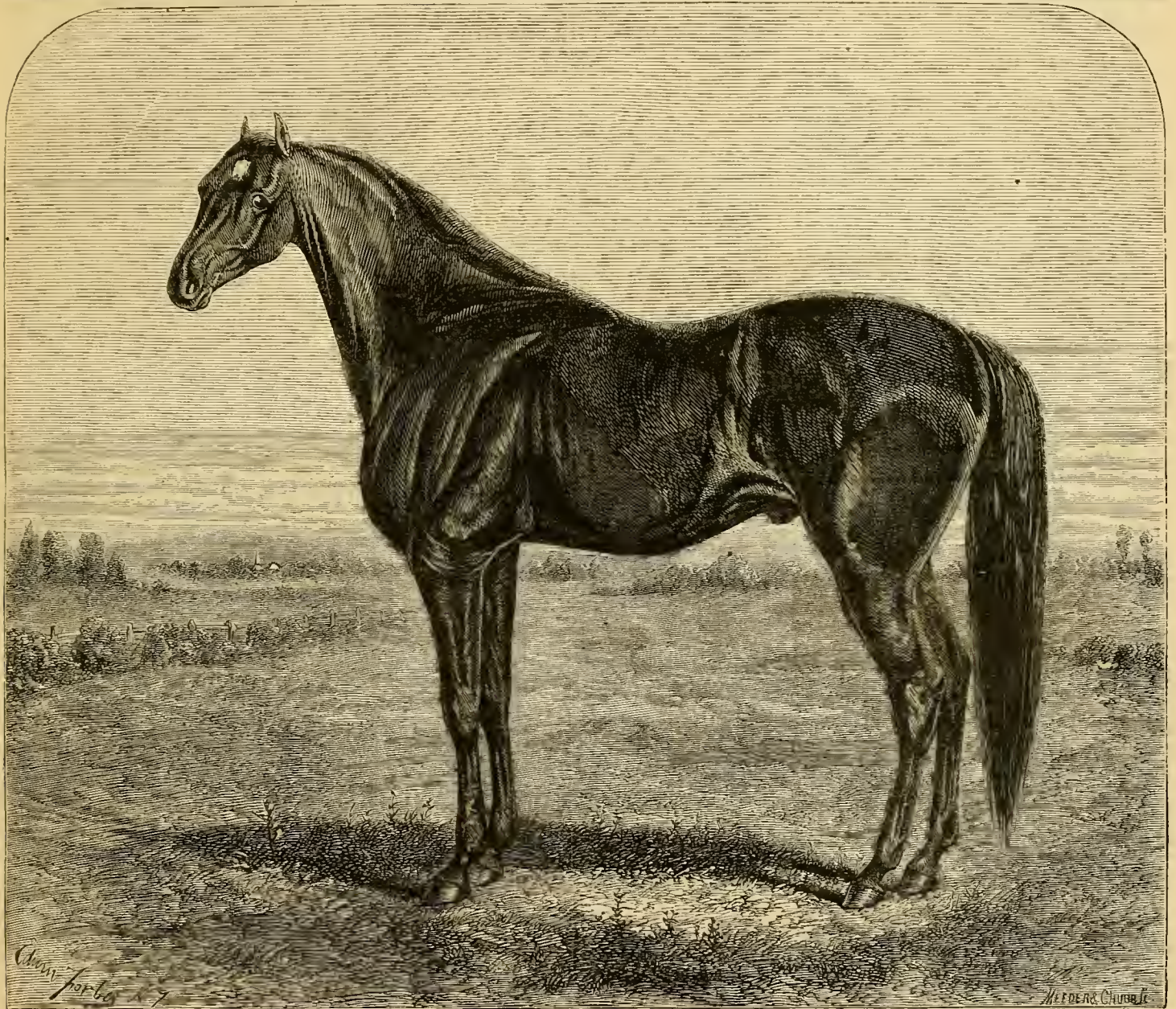
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AMERICAN AGRICULTURIST.

NEW-YORK, SEPTEMBER, 1869.

Work will vary with the weather. If we have a moist time the opportunity should not be neglected to have the plowing done early, and then to kill several crops of seedling weeds with the harrow. If the weather is hot and dry, no better time can be found for burning weeds along stone walls, or cutting and drying those in the field or in the meadow that are in seed. If the fall work that can be done at this season is finished, look to the swamps and to the draining of boggy ground where too much water stands in ordinary seasons. Rainy-day work is plenty. There is grain to thrash and prepare for market—peas and beans also; the corn-house to put in order, and apparatus for grinding and cooking pig feed. Withal save time to attend the fairs, and by all means exhibit something.

Hints About Work.

Apples.—Windfalls are full of worms, usually. Pick them up regularly, and feed to the pigs all not fit for cider, or at least for vinegar.

Field Crops.—Beans should be pulled as soon as the pods seem well matured. They will cure in a loft better than in the field, and a few may be cured on a barn floor. In the field, stack them between stakes to keep off the ground and thrash when dry.

Potatoes.—Dig as soon as ripe—provided there is not much rot among them—in which case use judgment. If they can be dug and sold before they rot much, well; if they can be fed with profit, do so. Do not put them into the cellar to become a mass of corruption, and make it necessary to overhaul and throw them away by and by.

Corn.—Pulling corn fodder is a Southern practice, which we do not approve of. If it seems best to pull leaves this year, do not do it until the grain is glazed. Topping is much less objectionable—in fact, we do not object to it in the case of large, coarse-stalked varieties. This, too, should never be done until the glazing of the kernel shows that the grain has its full size. No doubt it is a damage to the corn, but there is proportionate gain in the feed, which is very valuable. Cutting up at the ground has much in its favor. The field is as good as cleared at one operation, and may be plowed and sown at once if desired—provided the stooks are made on as few lines as possible, standing very close. Taking twenty-five rows the longest way through the field, it is no very great labor to close on the middle row, taking twelve hills on each side, and so make a stook to every hill on this row—leaving plow lands of one hundred feet or thereabouts in width, which should be plowed "inward," or "right about." The grain must be well glazed before the stalks are cut. It loses scarcely perceptibly in weight, while the stalks and leaves are saved. One day's or half a day's drying after being cut up will save the fodder from injury from severe frosts, which would otherwise render it flavorless and of little value as fodder.

Corn Fodder.—Cattle and horses will eat corn leaves and husks well; they will eat almost the whole of the toppings, but unless it is cooked they will not eat all the but stalks. However, if cut up and soaked, they will eat a good portion of them, especially if dusted with a little meal or oil-cake. What they refuse is worth, we presume, half as much as manure as it would be if eaten. The immense waste of feeding corn fodder on the ground is, that but a comparatively small part is eaten, and the rest is utilized as manure to but a small extent. Corn fodder, sown for the purpose, should be cut as close as possible, bound in small bundles, with new rye straw, and set up against rails laid on crossed stakes, or in crotches against a fence, or in open shocks, to dry. It will not mould enough to hurt it unless it lies long flat upon the ground.

Roots.—Beets, carrots, parsnips, and turnips, make astonishing growth this month. Keep them

clear of weeds, which sap the very life of the soil. It is an excellent plan to run a one-horse subsoil plow between the rows. If crowded, roots of all kinds may be thinned to advantage, and the surplus sent to market or fed to stock. Hogs will grow fast on the diet, though it is not very fattening.

Grass.—If the aftermath is to be cut, do it in this month, and, if you can, manure with fine compost or some "hand manure" afterwards. This gives a chance for a good covering to grow, to protect the roots of the grasses from the winter. If the second growth is to be fed off, it is economy to tether the cows. The writer tethers with chains, using iron fetters to attach them to one hind leg. If the fetters fit, there will be no wearing of the skin after a few days. Change from leg to leg daily. The cows need water three times a day, and to have the stakes or rods shifted according to the abundance of the feed, giving them six feet or more advance at each shift. See that the cows cannot get together and become twisted up. The twisting up, and turning around trees, etc., are the only accidents that can happen to cows tethered by the leg. Tied by the neck, they may hang themselves as easily as not, and often do, in an open field. New grass land and stubble should not be fed off too soon or by heavy animals of any kind.

Seeding down.—Grass may be sown alone at this season, or a little earlier perhaps, better than at any other. Prepare the ground well, giving thorough harrowing and top-dressing, picking off the stones; sow the seed, and roll. A bushel of oats harrowed in before the grass seed is sown, will afford the young plants the protection of a fine mulch during the winter, and unless the season is very mild, will be thoroughly dead and out of the way when spring comes, making good manure.

Saving Seed.—Seed corn should be marked before it is cut up, by selecting the best ear where two or more are on a stalk, and tying strings tightly around them. They will thus be found and thrown one side at husking. Seed potatoes should be selected from those that have healthy stalks, and ripen first. It is very well to go through and dig from hills before the general digging. If the whole crop is to be saved for seed, or if it is desirable to keep it pure, go through carefully, and dig any suspicious or peculiar looking hills. Seed of all kinds should be kept where it is dry, in nets, baskets, loosely covered pails, or in net bags, or tied together and suspended. Close vessels are often fatal to seeds, causing them to mould or heat.

Winter Grain.—Wheat.—The land should be put in order, well manured on the surface, harrowed to a fine tilth, and the seed sown as early as possible this month. Use any fine, rich, well-rotted compost. Peruvian guano, fine bone-dust, and almost any good fertilizer, containing both ammonia and phosphoric acid, will pay. Soaking the seed in a strong brine and drying with dry slaked lime prevents smut to a great degree. Pickling enables one also to skim off and separate many of the light grains which the fan-mill leaves.... Rye may be sown the latter part of the month, but is usually sown in October, as sometimes it makes too rank a growth, and is smothered thereby in the course of the winter. Much depends on the land.

Buckwheat is greatly injured by even a light frost. Be prepared to cut and put in little cocks or gavels as soon as frost threatens. The tops should be gathered and bound at the top, more to prolong the drying and to prevent the wind scattering the grain, than to make the little gavels shed rain. Many kernels, half formed when cut, will fill out at the expense of the juices of the haulm.

Sorghum.—This crop is one of great importance, especially with present facilities for working it up. It should be topped, cut up, stripped and stacked before frost, to be hauled to the mill and worked up before hard freezing weather.

Live-stock of all kinds require good feeding, for they lay on flesh and fat much more readily in mildly warm weather than when it is colder, in cool weather better than in cold, and when severe weather comes, it is almost impossible to make

cattle and hogs hold their own unless warmly sheltered. Animals in good condition are easily maintained so, unless exposed to great cold, for they are already as if well blanketed. Horses and sheep bear vicissitudes of weather better than other stock if they have enough to eat, but if either is allowed to run down, it is hard to get them up again.

Hogs.—Feed old corn (ground) if you have it,—it gives them a splendid start. Grind and cook all grain fed to swine if you would get the full benefit of it. There is a difference of 25 per cent in favor of grinding alone, and we doubt not nearly or quite as much more in favor of cooking. However, there is probably little loss in feeding “nubbins” and soft corn whole, if fed early, and it makes a relishable variety. A few handfuls of charcoal mixed with some ashes and a little sulphur, makes an excellent tonic and regulator for almost any kind of stock, and especially for swine. It will be eaten readily if a little meal be thrown upon it. The prospect is that grain of all kinds will bear a low price, and the best way to get our money's worth will probably be to have the pork fattened early, and held ready to kill or market.

Bees that are to be ripened off and marketed this fall should be early in condition to sell, and held ready for shipment at the shortest notice.

Work in the Horticultural Departments.

Now is the month of the harvest, and each one should show what he has been doing. Take the best of the products to the County fair. If a neighbor has something better, talk with him and learn how he produced it. Do not think it is necessary to carry Duchess pears or prize dahlias, but if you have a squash, cabbage, or anything that seems good to you, take it to the fair and see who produces better and how he does it. Take the best fruits of the orchard, kitchen garden, and flower garden, and help make up a show, whether competing for a premium or not. The best show of fruits we ever saw was one in which no premiums were awarded. It must be a poor orchard or garden which does not produce one thing worthy of being looked at by others.

Orchard and Nursery.

Planting.—Where the autumns are mild, by all means plant all hardy trees in autumn, except stone fruits, which do not seem to do so well. It will be a month or more yet before trees can be obtained from the nurseries, but now is a good time to prepare the soil for them. Put on a plenty of the best manure, and plow and subsoil until the whole is as well prepared as for a garden.

Order trees early from the nurseries. All the State Societies publish lists, but these need modifications to suit particular sections. Plant chiefly of the sorts known to succeed in your neighborhood, and try others which promise well. If planting for market, have but few varieties, and those of productive and marketable sorts.

Picking and Picking of autumn fruits require considerable judgment. They must be taken from the tree when fully matured, and yet before they have begun to mellow. This is especially the case with autumn pears, which ought always to reach the retailer before they are in eating condition. The fruit will give better satisfaction to the consumer, and the shipper will be saved much loss. In packing apples use new barrels; open the bottom of the barrel and place in a layer of good fruit with the stems towards the head, or downwards; then fill in with fruit properly packed, and put the bottom head on with pressure, so that there will be no shaking.

Fallen Fruit is of as much importance, in one respect, as that which is picked; it usually contains insects, and should be gathered regularly. The best use to make of fallen apples is to grind, press, and make vinegar of them. If sufficient care can be given, the sound part of such apples and pears may be cut out and dried or preserved.

Drying Fruit is treated of on page 340. Much

of the drying is done in the open air by sun heat. Where this is the case, it will be found to be a great help to have a room which can be readily heated by a stove, to which the fruit can be removed on a damp day, or during a rainy spell.

Budding.—Examine the stocks which have been worked, and if the bandages are too tight, loosen them. In many cases it is not too late to re-bud if the bark will “run.” Quince stocks and peaches are usually in good condition this month.

Nursery Trees may be pruned to bring them into proper shape, and their growth improved by

Manning.—This is done by opening a shallow furrow between the rows, placing in it a well-prepared compost, and covering it again with the plow.

Seeds, of all the stone fruits especially, must not be allowed to get dry. Mix peach, plum, and such seeds, with sandy earth, and at the proper time they should be exposed to frost.

Fruit Garden.

In most localities fall planting is to be recommended, at least for all places having the warm and long autumn of the vicinity of New York. A rich, deep soil is to be secured by previous preparation.

Blackberries are sufficiently treated of on page 339.

Raspberries require similar treatment, in regard to pruning, as blackberries. Some kinds throw up an abundance of suckers, which should not be allowed to grow unless more plants are needed.

Black-caps, it should be understood, propagate by the rooting of the tips of the canes only. Ordinarily, they do this without any attention, but if winds prevent the tips from taking root, throw only enough earth upon them to hold them in place.

Strawberries.—Keep beds planted this fall clear of both weeds and runners. Runners started in pots may be put out at any time, as may those which have to be carried but so short a distance that their roots will not get dry. It is not advisable to get plants from a distance at this season unless in pots.

Grapes.—Use scissors in gathering, to avoid injuring the bloom. The early varieties are picked for market as soon as they color.

Kitchen Garden.

Clear away all old stuff, such as spent crops of beans, and whatever may be cumbering the ground without profit. Plow in manure, and prepare for the winter crops.

Beans.—String beans are to be gathered and salted for winter use. The Limas will now be in perfection. If there are more than will be needed, shell and dry them for winter; when frost comes it will be too late.

Cabbages and Cauliflower.—The time for sowing seed for winter plants in the neighborhood of New York is from the 10th to the 20th of the present month. Sow the seeds in the open ground in a well-prepared bed. The Early Wakefield is the favorite with us, but the Fottler and others will contest the superiority with it. Keep the seed beds well weeded, and sprinkle lime upon the plants if the “flea” appears.

Boracole or Kale, more popularly known as “sprouts,” is to be sown this month. See page 339.

Corn should now be dried for winter use. Some prefer to salt it. It is cut from the cob without boiling, and packed in a jar with salt.

Cucumbers.—Gather those for pickles at least every other day. See page 339.

Celery.—Earth up, as may be required, that grown in trenches. Celery grown in flat culture is to be earthed up only about ten days before it is required, and the crop for winter is left until later.

Endive.—Blanch as required, either by placing mats over it or by tying. An old gardener, a neighbor of ours, prefers tying, not at the tips, but about half way down the leaves.

Melons.—By this time it will be easy to tell which will ripen. Pick off the rest and use for mangoes. At any rate it is better to remove them.

Onions.—See that they are thoroughly cured before storing, and then they should be in such thin layers or such small packages that they cannot heat. Onion sets, as well as top onions, are to be spread thinly in a cool loft.

Radishes.—Sow the winter varieties, especially the Chinese Rose-colored Winter.

Shallots.—The majority of the young onions sold in our markets in early spring are shallots. These are set this month, placing the little bulbs six inches distant, in rows a foot apart. Keep clear of weeds as long as the ground can be worked.

Spinach.—The crop to winter over is sown about the 10th of the month in the latitude of New York. The rows are 12 to 15 inches apart. When the plants come up, thin and weed them.

Sweet Potatoes.—When the first frost touches the vines, dig them. It often happens that a “mess” can be filched from the rows by carefully feeling in and taking out the longer roots before it becomes necessary to dig.

Tomatoes.—Make catsup and can while the fruit is at its best. Later, it is poor and watery stuff. The large green “worm” will still depredate upon foliage and fruit, and will need crushing.

Turnips.—No plant better repays good culture than the Ruta-baga or Swedes turnip. It should be thinned so as to have room to grow, and then be encouraged by frequent hoeings. A little good phosphate helps it wonderfully. Round turnips may still be sown and make a crop.

Winter Cherry.—Pick the fruits as fast as they ripen, and use them for preserves, or spread them for winter use.

Manure.—Accumulate from all available sources. Use all the garden refuse and all weeds which have no ripened seeds; these, stratified in a heap with stable manure, will give a splendid compost.

Flower Garden and Lawn.

Chrysanthemums will now need stakes. They give such a gay appearance to the garden a month or more later that they should now have proper care. Pot those intended for blooming indoors as soon as the buds are well formed.

Cannas.—A correspondent informs us that if the finer kinds are allowed to be touched by frost before the roots are lifted, he has great difficulty in preserving them through the winter; therefore, with all but our common *Canna Indica*, it will be safest to take up the plants before the frost injures them, lay them under a shed, and allow the roots to mature.

Dahlias should now be in their prime. Tie them to stakes as needed, and put in auxiliary ones for the branches. Remove all misshapen buds, and the flowers as soon as they have lost their beauty.

Herbaceous Perennials may, many of them, be lifted and divided this month, especially those which lose their foliage early. Peonies can only be successfully removed in autumn. Sow seeds of such perennials as ripen now, and they will make plants which, with a little protection, will pass the winter safely, and will bloom next year.

Bulbs of the spring-blooming kinds, such as hyacinths, tulips, etc., which were taken up earlier in the season, may be reset the last of this month or early next. If purchases are to be made, procure a supply as soon as the dealers receive their bulbs.

Pits and Cellars are much in requisition for wintering half hardy plants. A brick pit will keep many things through the winter which are ordinarily put into a green-house, and a dry, frost-proof cellar, which is well lighted, will preserve the plants about as well as a pit.

Green-house and Window Plants.

Green-houses and their heating apparatus should be put in thorough repair, as it is very annoying to have work going on after the plants are taken in.

Plants in Pots, whether they are to go into the green-house or the window, should be looked to. They must not be allowed to suffer from dryness.

Hangng Baskets, so pleasing in winter, may be planted now to get a good start. Use plenty of...

Bulbs for winter blooming may be potted if they are at hand or can be obtained. After the bulbs are put in, plunge them in dry earth, or cover with coal ashes until time to start them.

Cuttings of bedding plants may be made for a winter stock.

Annuals, which are desirable for winter blooming, may be sown. Candyfust and Mignonette are always in requisition.

The Fairs for 1869.

State and National Fairs.

Table listing state and national fairs with columns for location and dates. Includes entries for American Institute, Am. Institute, Alabama, Arkansas, etc.

Horticultural and Kindred Fairs.

Table listing horticultural and kindred fairs with columns for location and dates. Includes entries for J. Am. Pomological Soc., Ohio Grape Growers' Ass'n, etc.

County and Local Fairs.

MAINE.

Table listing county and local fairs in Maine with columns for location and dates. Includes entries for E. Kennebec, Orland and Beckport, etc.

NEW HAMPSHIRE.

Table listing county and local fairs in New Hampshire with columns for location and dates. Includes entries for Cheshire Co., Contocook Valley, etc.

MASSACHUSETTS.

Table listing county and local fairs in Massachusetts with columns for location and dates. Includes entries for Barnstable, Bristol, Berkshire, etc.

Table listing fairs in Vermont with columns for location and dates. Includes entries for Plymouth, Union, Worcester, etc.

VERMONT.

Table listing fairs in Vermont with columns for location and dates. Includes entries for Addison Co., Caledonia Co., Conn. River, etc.

CONNECTICUT.

Table listing fairs in Connecticut with columns for location and dates. Includes entries for Fairfield Co., Hartford Co., Middlesex Co., etc.

NEW YORK.

Table listing fairs in New York with columns for location and dates. Includes entries for Albany Co., Chautauqua Co., Delaware Co., etc.

NEW JERSEY.

Table listing fairs in New Jersey with columns for location and dates. Includes entries for Cumberland Co., Gloucester Co., Hunterdon Co., etc.

PENNSYLVANIA.

Table listing fairs in Pennsylvania with columns for location and dates. Includes entries for Blair Co., Bucks Co., Chester Co., etc.

MARYLAND.

Table listing fairs in Maryland with columns for location and dates. Includes entries for Carrol Co., Frederick Co., Montgomery Co., etc.

OHIO.

Table listing fairs in Ohio with columns for location and dates. Includes entries for Andover, Ashtabula Co., Augusta, etc.

Table listing fairs in Kentucky with columns for location and dates. Includes entries for Trumbull Co., Thompson, Twinsburg, etc.

KENTUCKY.

Table listing fairs in Kentucky with columns for location and dates. Includes entries for Bourbon Co., Bowling Green, Campbell Co., etc.

INDIANA.

Table listing fairs in Indiana with columns for location and dates. Includes entries for Fayette Co., Hancock Co., Henry Co., etc.

ILLINOIS.

Table listing fairs in Illinois with columns for location and dates. Includes entries for Atlanta Co., Aurora Co., Boone Co., etc.

MICHIGAN.

Table listing fairs in Michigan with columns for location and dates. Includes entries for Bay Co., Branch Co., Cass Co., etc.

MINNESOTA.

Table listing fairs in Minnesota with columns for location and dates. Includes entries for Dakota Co., Fillmore and Mower Co's, Goodhue Co., etc.

WISCONSIN.

Table listing Wisconsin counties and their respective dates: Columbia Co., Fond du Lac Co., Grant Co., Green Co., Green Co. (Horse), Iowa Co., Racine Co., Ripon Co., Rock Co., South Wisconsin Co., Walworth Co., Winnebago Co.

IOWA.

Table listing Iowa counties and their respective dates: Adams Co., Allamakee Co., Appanoose Co., Benton Co., Boone Co., Bremer Co., Cedar Co., Cedar Valley, Central Iowa, Chickasaw Co., Clayton Co., Clinton Co., Davis Co., Des Moines Co., Fayette Co., Floyd Co., Harrison Co., Henry Co., Howard Co., Jackson Co., Jasper Co., Jefferson Co., Johnson Co., Lee Co., Lucas Co., Lynn Co., Madison Co., Mahaska Co., Marion Co., Montgomery Co., Monroe Co., Muscatine Co., Scott Co., Tama Co., Union Co., Union Dist., Van Buren Co., Washington Co., Wayne Co., Wheatland, Winneshiek Co.

MISSOURI.

Table listing Missouri counties and their respective dates: Boone Co., Buchanan Co., Calloway Co., Carroll Co., Cass Co., Chariton Co., Clinton Co., Cole Co., Cooper Co., Green Co., Holt Co., Independent Ass'n., Jefferson Co., Johnson Co., Knox Co., Lafayette Co., Lewis Co., Livingston Co., Louisiana (Township), Lynn Co., Macon Co., Monroe Co., Montgomery Co., N. Mo. Stock, etc., People's Ag'l. and Mech. Ass'n., Pike Co., Platte Co., Randolph Co., Ray Co., Saline Co., Scotland Co., Shelby Co., St. Joseph Co., St. Louis Mech. etc., Sturgeon Co., Vernon Co., Warren Co., Webster Co.

VIRGINIA.

Table listing Virginia locations: Rockbridge, Border Fair, Va. & N. C., Danville.

WEST VIRGINIA.

Table listing West Virginia location: W. Va. Central, Clarksburg.

NORTH CAROLINA.

Table listing North Carolina location: New Hanover, Wilmington.

TENNESSEE.

Table listing Tennessee locations: Montgomery Co., Clarksville, Wilson Co., Nashville.

OREGON.

Table listing Oregon location: Washington Co., Hillsboro.

Draughts of Cold Air.—"W. A. G."

Washington, is annoyed by the draughts of cold air which enter under and around his window sashes. The remedy is a very simple one. Procure some India-rubber window strips and tack them on. There are several kinds, made by different manufacturers, but they all agree in principle. They are sold here, and we presume elsewhere, at the house-furnishing and hardware stores,

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for the month ending Aug. 14, 1869, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

Table showing receipts of Flour, Wheat, Corn, Rye, Barley, Oats for 28 days this month and 24 days last month.

Table showing sales of Flour, Wheat, Corn, Rye, Barley, Oats for 28 days this month and 24 days last month.

Table comparing sales with same period at this time last year.

Table showing receipts of Flour, Wheat, Corn, Rye, Barley, Oats for 27 days 1869 and 27 days 1868.

Table showing sales of Flour, Wheat, Corn, Rye, Barley, Oats for 27 days 1869 and 27 days 1868.

3. Exports from New York, Jan. 1 to Aug. 12:

Table showing exports of Flour, Wheat, Corn, Rye, Barley, Oats from 1869 to 1868.

4. Stock of grain in store at New York:

Table showing stock of Wheat, Corn, Rye, Barley, Oats in bushels for 1869 and 1868.

5. Receipts at head of tide water at Albany each season to Aug. 7th:

Table showing receipts of Flour, Wheat, Corn, Rye, Barley, Oats at Albany for 1869, 1868, and 1867.

CURRENT WHOLESALE PRICES.

Table listing various commodities and their prices as of July 13 and August 14, including Flour, Wheat, Corn, Rye, Barley, Oats, and various oils and seeds.

advantage as to price was in favor of buyers, influenced in part by the recent sharp rise in rates on ocean freight. There has been more doing in Corn for the home trade, and on speculative account, and with light receipts prices have advanced sharply. Only a small proportion of sound Corn, as well as of spring Wheat, has been available, the bulk of the receipts having been more or less damaged by heating. Rye has been in some request within a few days, mainly for export, and has been quoted steady. Oats have declined materially under free arrivals, particularly of new crop, largely, however, in poor order. Barley and Barley Malt have been inactive. Provisions have been in light supply, and held with more firmness, as a rule, on, however, a very moderate business, save in Lard, which has been rather freely purchased for export and on speculation. Wool has been more sought after and quoted steadier. Manufacturers have been the principal buyers. Cotton, Hops, Hay, and Tobacco, have been moderately inquired for. The new crop of Hay is coming forward more freely, and is meeting with increasing favor among buyers for home use.

New York Live Stock Markets.

Table showing weekly ending prices for Beef, Cows, Calves, Sheep, Swine, etc., for July 19th and August 21st.

Table showing average per week prices for Beef, Cows, Calves, Sheep, Swine, etc., for 1868 and 1869.

Table showing receipts at head of tide water at Albany each season to Aug. 7th for 1869, 1868, and 1867.

The supply of beef cattle this month has been a little above the figures given for last month's stock. The quality has also improved somewhat, although none have been over fat. The "Texas Fever," which raged so seriously a year ago, seems to have passed by this year, and we now have a large proportion of Texas cattle in market. Some of this grade, fed by Mr. Alexander on his farm in Illinois, for one year, were especially noticeable. They would average about 6@6 1/2 cwt., and were really fine; they brought 13c. on the scales. Mr. A. is a large dealer in Texas cattle, and he proposes to see his cattle killed, and find out for himself how they look when dressed. There seems to be a great prejudice among butchers against Texas cattle, but why there should be against fat ones, we can not see. We are sure that inferior Northern cattle sold for a much higher price, both last week and this week, than good Texas cattle brought, both standing side by side in the same market. We hope Mr. A.'s cattle will prove to butchers that this is mere prejudice, and that good, fat Texas steers will be plenty in our market hereafter. There was one drove of very poor Florida cattle in market, but they looked so very bad that their owners said they were not for sale, but intended for the country. They will need at least one year's feeding before they become fit for market. Below we give the range of prices, average price, and figures at which the largest lots were sold.

Table showing prices for July 19, ranged 10 @ 16c. Av. 14 1/2c. Largest sales 13 1/2 @ 15 1/2.

The market has not been very active, and prices have declined at least one cent per pound. In some instances we call it more than one cent, for the stock averaged better. Excluding the cattle from Florida, the animals averaged fair, and showed an improvement over last month. Milk Cows are generally in little better demand at this season of the year, and trade in this department has brightened up a little. Good cows sold readily at fair prices, to milkmen, to supply the place of those going dry. "Fancy cows" found a few buyers at high prices, but there was seldom more than \$150 paid for a cow and calf. Prices range from \$90 for good cows, all the way down to \$50 for inferior ones. Veal Calves.—The great majority of calves now coming to market are poor, rather low in flesh, and of all sizes. But few sell by the pound. They are mostly sold by the "lopp," or single one. Prices range from \$7 to \$10 a head, when sold in this way. As we close this report veal is a little more called for, and we notice a slight advance in price; some milk-fed calves are selling by the pound at from 9@11 1/2c., live weight. Sheep.—The arrivals have been very abundant, although not so large as those of last month. There are too many sheep in market for a healthy trade. Buyers feel unsettled, and the whole aspect is unsatisfactory. Drovers have to pay higher prices in the country than the market will warrant, and many sales are made to butchers here on long credit, or with notes dated ahead, so the prices paid are really a little above the actual cash market. This is not

right, and the sooner they come to a cash basis, the better. Prices for sheep are nearly unchanged from figures given last month. They range from $4\frac{1}{2}$ to $6\frac{1}{2}$ c. for ordinary to prime, with some extra fat at 7c. Lambs are abundant and low. They are also rather poor, and sell even less readily than sheep. Prices range from 6@9c. per pound, with very extra at $9\frac{1}{2}$ c. . . . **Swine** sell steadily, and every week the yards are almost cleaned out. Prices are looking up a little. Most of the hogs still go at once to the slaughterer's, and are offered for sale dressed. Alive, they are really worth 10@10 $\frac{1}{2}$ c. per pound, as they sell readily at 12 $\frac{1}{2}$ c. when dressed. For the week ending Aug. 9th, a few very extra dressed hogs brought 12 $\frac{3}{4}$ to 12 $\frac{1}{2}$ c. per pound. One car load of "Ohio stillers," fat, sold on foot for 10c. per pound. The market is not very active just now.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be prepaid at the Post-office where the paper is received.

How to Remit.—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of Orange Judd & Co.

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect Oct. 1, 1868, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. *Obscure*, the Registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money, and seal the letter in the presence of the postmaster, and take his receipt for it. Letters thus sent to us are at our risk.

Bound Copies of Volume XXVII (1868) are now ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (16 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume, (50 cents extra if returned by mail.) Missing numbers supplied at 12c. each.

An Important Work.—Orange Judd & Co. have in press a work on Agricultural Analysis, edited by Prof. G. C. Caldwell of the Cornell University. Teachers of Agricultural Chemistry have long felt the need of a text book which should serve as a guide to the analysis of soils, manures, and the products of the farm. The present work is very thorough, beginning with the preparation of reagents and giving the most approved methods of manipulation. To teachers of agricultural chemistry in the many agricultural colleges now springing up, this will be a most welcome aid, while it will prove a great help to those who are advanced in analysis, as it presents at one view a special class of operations, which must, had this not been prepared, have been sought for through several works. Professor Caldwell modestly calls himself the editor, but his manuscript shows that he has not contented himself with editing the works of others, but has given much of his own experience. The work will be ready for the fall classes of the agricultural colleges.

Pictures in the Household.—A bare wall is very cheerless. Even the coarse colored lithographs that are hawked about are better than nothing, to put upon the walls for the eye to rest upon, but a well-executed engraving is much better. The introduction of Chromo Lithographs, or Chromos, as they are now popularly called, has placed it within the power of persons of moderate means to adorn their dwellings with beautiful pictures. In these chromos the picture is reproduced in colors with such fidelity that only good judges can distinguish the original from the copy. Only the wealthy can afford to have original pictures, but almost every

one can have the next best thing to them,—a good copy in chromo. We announced in August last that Mrs. Lilly M. Spencer had painted a charming picture, called "Dandelion Time," which the publishers of this paper were preparing to produce as a chromo. It will be seen, by reference to the advertising columns, that the picture is now ready. Three children are out upon the grass with the old family dog, who has been decked with a dandelion wreath, but feels too much the responsibilities of his position to join in the gayereties of the children, who are having a good time among the dandelions. The picture is full of innocent child life, and will bring back memories of happy days to all who possess it.

Bermuda.—A large steamer now runs regularly between New York and the Bermuda Islands, bringing to our market the earliest onions and potatoes, and thousands of bunches of the finest bananas, etc., etc., and carrying back such merchandise as is needed at the islands, including one hundred and fifteen copies monthly of the *American Agriculturist*. Ah! that's what did it! It improves the state of agriculture wherever its influence is felt. We advise everybody, and their friends, to subscribe now and get three months for nothing. See page 321. The engravings alone are worth more than the price of the paper.

Scripture Quotations.—"A Friend," at Keyport, N. J., finds an anecdote in regard to a juvenile misreading of scripture which we gave in the Boys' and Girls' columns last month, irreverent. We would not in any way offend the religious feeling of any person. We did not see anything improper in the item, or it would not have been printed. To show that we are not alone in our view of the matter we will say that the anecdote referred to was given us by a clergyman who is a Doctor of Divinity, and an author whose writings we have no doubt our friend has read with pleasure.

New York State Poultry Society. Coming Exhibition.—This Society, which won golden opinions last spring, is now distributing its golden and silver tokens to successful exhibitors. These medals are beautifully designed and executed. The silver medal contains over \$3 worth of silver and has cost the Society not less than \$6. The design represents a group of farm-yard poultry of all kinds, and a chick breaking the egg in the foreground. On the reverse is the inscription, enclosed in a wreath of bay, with a bird's nest where the wreath is tied. The Society encourages every thing useful or ornamental produced from the egg (including insects, we presume) and certainly fish; hence the prominence given to the egg in their design. The great gold medal is struck in the same dies with the silver medal, and is worth not far from \$80. The small gold medal is considerably smaller, but very chaste and beautiful. The Society proposes to hold an exhibition beginning on the first Tuesday in December and continuing until the last of the subsequent week. The distinguished writer on poultry, Mr. Tegetmeier, of London, has accepted the invitation of the Society to deliver a course of lectures at the time of the exhibition. The officers of this Society are, we believe, exerting themselves to the utmost to give the Society a high stand and make its decisions the highest authority in the land, on its specialties. Mr. G. H. Warner, of New York Mills, N. Y., is President, and Mr. Daniel E. Gavitt, of New York City, is Secretary. The Society has our confidence, best wishes, and hearty co-operation.

Sundry Humbugs.—There is one "Doctor" E. Andrews, the "Good Samaritan" of Albany, who is a great man. He offers "the public treasure" in the way of medical and religious books, etc.,—at least he says so, and we should say so too, judging from the paper before us. Of course, Mr. Dr. A., you are a "reformer in medicine;" "Good Samaritans" always are, and when you get through with reforming medicine if you will only reform yourself,—leave off quackery and take up some honest business,—we shall think better of you. There is no need to tell us "there is balm in Gilead." We know that already; but Oh! Doctor, is there balm in Albany? We doubt it, for as we read on to the end of this precious little pamphlet of yours, we find the "Doctor" has fallen from grace and wants two three-cent stamps for every letter he answers, and from \$1.00 to \$12.00 for every bottle of medicine he sends out. . . . Cambridge & Co. seem to have had such good luck with their photographed "greenbax" that we find others are taking up the trade. Two of the more prominent just now are Henry B. Chatman, Bridgeport, Conn., and Noyes & Co., New York. This last-named firm are old offenders in many ways. A few months ago they were in the bogus lottery business; now they want to sell spurious money. They all have the same confidential letter, and manifest the same great haste to strike a bargain with some one. Beware of all such men. We are often

asked, How can such things be done day after day in open defiance of law? We answer, by finding young men and old ones who are foolish enough to trust them and risk \$5.00 or \$10.00 in the "stuff," as it is aptly called. We have no doubt that many persons send money to these advertisers out of mere sport, and without thought that their action is criminal and punishable. . . . We know nothing about the "Apex Sewing Machine;" and repeat here what we have often said—Don't buy cheap sewing machines. If any one wants a sewing machine he should buy a good one, and none of the cheap ones that we have seen are good for any thing. . . . Messrs. S. W. Waters & Co. still keep at the preliminary drawing of the "N. Y. Jewelers' Coöperative Union," and we continue our warning against them. . . . Calvin Willis & Co. claim to be "Purchasing and Forwarding Agents," and they may be such; but who would want any of the trash they advertise to send, forwarded any where at any price? Their advertising circular is simply nasty, to put it mildly, and we need only mention the fact to our readers. . . . Flashy advertisers of cheap burning fluid are again coming around. Here is one that assumes the dignity of a paper. "The Light for the world, 25c. a year,"—dear at half the price. We warn all persons not to trust them or their burning fluid; all low-priced fluids are dangerous to use. . . . Dailey & Co., New York, are also in the counterfeiting business. Their plan is little better calculated to deceive than those mentioned above. Messrs. D. & Co. claim to have stolen from the treasury vault the plate upon which original copies were taken, and that the "greenbax" they send are "sure go every time," and just like the genuine one, only a little shorter, etc. How fortunate it was for the treasury vault to be open just at the right time with nobody to watch it! Messrs. D. & Co., we have an eye on your operations.

Abortion in Cows.—Dr. Wm. H. Carmalt, Commissioner of the N. Y. State Ag'l Society for the investigation of the cause of abortion in cows, which has caused such great losses to the farmers of the State of New York, reported at the annual meeting in February. This report is now printed and circulated, and is, in a measure, a continuation of the report made by Dr. Dalton last year. It shows extended and minute research, and is illustrated by maps and numerous tables, prepared apparently with great care. No absolute conclusion is arrived at, but it seems to be the Doctor's decided opinion that the great demand made upon the cows for milk during pregnancy is a probable cause.

Cuba.—The war is still raging in the "ever faithful Isle," each of the contending parties weekly claiming decided advantages over the other and as often charging its opponents with gross excesses and inhumanity. It is a pity that this beautiful land should be thus desolated, and millions of dollars' worth of property be burned up, and more a pity that human life should be thus sacrificed. Our sympathies, of course, are with the free, and we suggest to all parties in Cuba, and everywhere else, to turn their attention to agriculture, subscribe for the *American Agriculturist* now, and get three months for nothing. See page 324. The engravings alone are worth more than the price of the paper.

Sewage System.—We have received from Dr. F. Coar, of Philadelphia, a pamphlet by Dr. G. Zehfuss, of Frankfort-on-the-Main, translated by Dr. Coar, on the Pneumatic Sewage System of Capt. Liernur. This system removes all the contents of the privies of cities, daily, and delivers them to the farmers at a reasonable cost. It is done by a steam locomotive, air-pump, and a suitable arrangement of reservoirs and of pipes connected with each house. It is being put into practical operation in Prague (Bohemia), and Brünn (Moravia), by capitalists depending solely upon the sales of manure for profit. We shall look with interest for the results. Meanwhile the earth-lobet system of disposing of and utilizing the same offensive matter is daily gaining favor. The two systems seem each to offer a solution to the vexed question—How shall we stop the present great waste of fertilizing matter?

The water drawn from the hydrants in Central Park, New York, is conveyed through lead-encased block-tin pipe.

Henry H. Crapo.—Ex-Governor Crapo, of Michigan, a man widely known and respected in the political world, and endeared to the people of his adopted State by faithful services and zeal for her welfare, died at his home in Flint, Mich., July 23d. He was born in Dartmouth, Mass., and was for many years largely interested in the lumber trade of Michigan, where he took up his residence. He was a large farmer, and thoroughly and actively identified with agricultural progress.

More Beautiful Houses.—The dwellings illustrated and described in the *American Agriculturist* for last March were quickly sold, and have so greatly pleased the purchasers that neither of them could be bought now except at an advance of several thousand dollars. Two more houses are now nearly completed on a similar plan, but with sundry improvements suggested by experience, and by hints from the readers of this journal. They are of larger size, have circle or arched-head doors and windows throughout the first story, more piazzas and windows, and are on larger plots of ground. They will be ready for inspection by Sept. 1st, by those who may wish to examine the plans and ad structure, by calling on the builder, Mr. John Donald. They are on Bowne Avenue, Flashing, about 100 rods from the Main Street R. R. Depot. Trains run between Flashing and 34th street and James Slip Ferries, N. Y. City, at almost all hours from sunrise to midnight. These houses will be sold to the first comers, on easy terms of payment, and at the cost of construction added to a moderate price for the land. Inquire of Jas. B. Parsons, 34 Pine St., or John P. Ellis, 256 Broadway, N. Y. City.

Finely Grown Lilies.—A magnificent specimen of the Golden-banded Lily, *Lilium auratum*, we think the finest we have ever seen, was sent by Mr. Geo. Such, South Amboy, N. J., who has great success with bulbs. A pot specimen from him of the more common Japan Lily, *L. speciosum*, was in our window for a week or two, and admired by hundreds. It had about a dozen stems, bearing from 4 to 12 flowers each. Then Mr. James Vick, of Rochester, sent more lilies—a large basketful of the kinds mentioned above, and many more which people would cultivate if they knew how beautiful they were and how easily they may be grown. There was the beautiful *Lilium longiflorum*, the Long-flowered, and the larger Brown's Lily, *L. Brownii*; the *L. Chalcedonicum*, with its bright scarlet Turk's-cap flowers; *acelsum*, with a color so delicate we hardly know how to name it; several varieties of *L. umbellatum*; and others, not forgetting the good old White Lily, *L. candidum*.

An Unfruitful Vine.—W. J. Teeter, Pulaski Co., Ind., has some vines which bloom every year, but bear no fruit. He does not say what vines they are, and we suppose he has one of our wild vines, which are often barren. Better plant some good varieties this fall, and if the others are in a desirable situation, the experiment of grafting may be tried. The grafting is done in October or November below the surface of the ground.

Trouble with Verbenas.—Mrs. "R. W. T.," Decatur, Ill. It is probably some form of mildew not known here. Send a specimen.

N. Y. Central Park Report.—Through the politeness of Hon. Andrew H. Green, Controller, we have received the 12th Annual Report of the Commissioners. A hasty perusal shows it to be equal in value to its predecessors. These reports form a valuable part of a horticultural library, as besides giving an account of the progress of the work, there is always material of use to those contemplating the laying out of parks, or who are interested in landscape gardening in general.

The Wild Goose Plum.—Specimens of this plum were sent by Samuel Baker, Madison, Tenn. Mr. B. claims to have the original tree from "seed taken from a wild goose's craw."—The plums were rather too ripe when packed, and did not reach us in very good condition. Enough were entire to show it to be a large and handsome variety of the wild plum, and if its productiveness and hardness are such as are claimed for it, it will no doubt be valuable as a preserving plum, and in those localities where the foreign sorts cannot be grown will prove acceptable as a table fruit.

The Grape Prospects.—In some of the grape localities in Ohio the continued rains have made sad havoc with the crop. At Hammondport, as we learn from our correspondent Dr. E. Van Keuren, they were at one time threatened with both mildew and blight, but the danger is now considered as past and they look for a fair average crop of fruit. Vines which were allowed to overbear last year, and those not properly cared for, have been more subject to disease than those in properly managed vineyards. . . . M. A. Stevenson, a well-known grape grower of Clyde, O., writes: "You are probably aware that we have had the most remarkable rainy period during June and July. The Catawba and Concord grapes were entirely destroyed in my vineyard, while the Delaware and Iona hang full of beautiful bunches that gladden the eyes to behold. In my brother's vineyard, the Iona has suffered but slightly, but his Concord and Catawbas are almost entirely destroyed by the mildew. He had 3 rows of Catawbas in the 3d season that gave the greatest promise for fruit, but were en-

tirely mildewed in a night and not a bunch left. A very curious fact is that I have some large Isabella vines trained on trees in my door-yard, correctly pruned, that are a sight to behold, hanging full of beautiful clusters and fine bunches of grapes, not in the least affected. The 500 Emmelan vines which I received this spring I planted late, near the 1st of June, on account of the excessive wet which prevailed. They are all growing and doing well, except 2 vines. A very great number are already between 3 and 4 ft. high. They are hoed clean, and the laterals are pinched with only one cane to each vine. Also the 500 Emmelans, which B. K. Stevenson planted about the 20th of May, are doing still better than mine. They give him great pleasure on account of their great vigor and bright dark green and enduring leaf."

Walnut Trees and Fruit Trees.—Mrs. D. S. Sharpe, Williamsburgh, O. We cannot conceive that walnut trees can exercise any injurious influence upon fruit trees except in two ways—robbing the fruit trees of nourishment by their extending roots, and by shading them. If the walnut trees are not so near the fruit trees as to injuriously shade them, then we should dig down and see about the roots; if they come into the territory of those of the apple trees and vines, cut them off and give the fruit trees a dressing of manure.

Vegetable Marrow and Pumpkin.—"P. W.," Yonkers, N. Y. The probabilities are that these will mix, though we are not sure. We do not know what you mean by "Turks-cap," unless it be the Turban Squash. See article on seed raising in July.

Brown Spots on Currants.—"S. O. C.," Yonkers, N. Y., sends samples of currants upon which are brown spots, and wishes to know what they are. The magnifier shows these spots to be so like the oyster-shell bark-lice that we think they must be the same. This louse ordinarily fixes itself to the bark of trees, and that it should attach itself to so perishable a thing as a currant shows a lack of knowledge in the insect. "S. O. C." should examine his apple and pear trees and the limbs of his currant bushes, to see if he is not badly troubled with the bark-lice. They must be very abundant if they attach themselves to currants.

An Important Nursery Sale.—Mr. D. D. Buchanan offers for sale at auction on the 28th of Sept., at Elizabeth, N. J., the stock of the well-known Reid's Nurseries. These nurseries were established by the late William Reid, long known as one of our most correct and conscientious pomologists, and their destruction to make way for city improvements, while it is to be regretted, is unavoidable. The sale will afford a fine opportunity to procure specimen plants.

American Preserving Powders.—In answer to several inquiries we refer to the advertisement, testimonials, etc., in the July number.

Protecting Cabbage Plants.—"J. S.," Hopkinsville, Ky., says that sprinkling wheat bran over the young plants will cause the insects to "vamose."—Query. Will not any powder do the same? We judge so from the various inert things that are recommended. We use plaster, which we suppose is inert as far as the insects are concerned, but it answers the purpose and probably serves as a fertilizer.

Fall Planting.—R. M. Leggett, Boone Co., Mo., asks if "grapes, raspberries, etc., can be set as safely in the fall as in the spring."—Yes, we prefer fall planting for all hardy plants in localities where the winters are not severe. One has more time, the plants can be had in better condition, and if set during the late autumn, they get well established and ready to start in the spring.

Plants Named.—J. F. Knight, Marion, Ala. The specimen is the *Amelanchier Canadensis*, called June-berry, Shad-bush, and Service-berry. It is a very variable plant in its wild state, there being some half dozen varieties. We have seen plants which produced decidedly pleasant fruit. It would be worth your while to try what you can do with seedlings. . . . "Subscriber," Wayne Co., N. C. Specimen too young to determine with accuracy, but probably the Nut-grass, *Cyperus rotunda*, var. *Hydra*. We know of no specific for getting rid of this, other than hoed crops. . . . "R. S. K.," Towanda, Pa. The shrub is False Indigo, *Amarpha fruticosa*, and is sometimes cultivated as an ornamental shrub. Your Kansas friend was wrong in the description. . . . C. N. Pratt, Windsor Co., Vt., sends two of our beautiful Orchids. The one with several flowers is *Calopogon pulchellus*, and that with a single flower is *Arethusa bulbosa*. These have received no common names but their

botanical names; the first or generic ones at least are not difficult to remember. Mrs. G. P. Johnson, Lake City, Minn., also sends the *Calopogon*. . . . Luther Purdy, Holmes Co., O. Spiderwort, *Tradescantia Virginica*, wild at the South and West, and at the East very common in old gardens. . . . Mrs. "L. H. M.," Bingham, Mich. Apparently a semi-double variety of the Peach-leaved Bellflower, *Campanula persicaefolia*. . . . V. Devigny, Denver, Col. Terr. The Columbine is not *Aquilegia glandulosa*, but a more beautiful one, your native *Aquilegia canadensis*, the most charming of all Columbinas. What you call Rocky Mt. Honey-suckle is apparently an *Astragalus* of some kind. Send us the seed-pods. . . . "G. S.," Slatersville, R. I. Queen of the Prairie, *Spiraea lobata*, of which there are several garden varieties, differing in the color of their flowers. . . . M. R. Allen, York Co., Me. No. 1. Arrowwood, *Viburnum dentatum*. No. 2, too imperfect. No. 3. *Diervilla trifida*, or Bush-Honey-suckle. . . . F. Williamsco, Otumna, Kansas. Leather-flower, *Clematis Viorna*. It bears hairy fruit later in the season.

The Canker Worm.—"Subscriber," Wellesley, Mass. We have about exhausted this subject in articles in previous years. The whole story is this. The females which lay the eggs that produce the mischievous worms are wingless. Whatever will prevent these from ascending the tree will save you from their ravages. It sometimes occurs that they ascend in autumn, but they generally leave their chrysalis condition in the ground in early spring. Some obstacle must be interposed to their ascent, and we have in former volumes given several. We cannot commend coal tar directly applied to the tree, as we fear it would prove injurious. The efficacy of all the preventives to the ascent of the parent of the canker worm depends upon frequent—almost daily—personal attention.

Golden Queen Strawberry.—"P. W.," Yonkers, N. Y. The Golden Queen from Rochester is so near like the old Trollope's Victoria that good judges are unable to see any difference. When you get one as large as a hen's egg we will come and see it.

The Charles Downing Strawberry.—An annoying error of figures occurred in the August number in a notice of Mr. Doty's results with this fruit. Mr. D's receipts from the bed 50x20 should have been put down at \$33.67, instead of \$208.25, which makes quite a difference.

Oats upon a Head of Wheat.—A. Robinson, Blue Earth Co., Minn., sends us a head of wheat upon which there are two grains or husks of oats attached in a manner to readily deceive one who did not make a thorough examination. We had seen such things before, and upon carefully removing the wheat and chaff it turned out as we suspected. The slender stem which supported the oats had in some way become drawn into the head of wheat. All familiar with the structure of a head of wheat know that the stem where it passes through the head is zigzag, and that the grains set closely in the notches. The slender stem of the oat having been drawn tightly into one of the notches and behind the grain, it rendered the deception very complete; but a careful examination showed no attachment whatever between the oats and the wheat stem.

The American Pomological Society.—The following circular has been issued by the executive officers. "Dear Sir: The next regular meeting of the American Pomological Society will be held in Philadelphia, on the 15th of September, 1869, and you are hereby specially invited to assist in furnishing information upon any point that may appear to you important connected with the objects of the Society—by the promotion and gathering of pomological knowledge. You are particularly invited to make notes from time to time of the period of blooming, the period of setting, of coloring, ripening, etc., of any and all fruits. You are also invited to note any disease that may appear, its period of attack, general appearance, length of duration, and results of injury. These, with such other items of practical observation which you may consider likely to subserve of valuable aid to the Society, you are earnestly invited to forward to the Secretary, F. R. Elliott, Cleveland, Ohio, on or before September 1st, 1869. You are also invited to send samples of any new fruits that you may have or can obtain, from time to time, as they ripen during the season, to the said Secretary. Such small package samples will be transported by most of the Express Companies free of charge, by explaining the object to the Agent, Marshall P. Wilder, Pres., F. R. Elliott, Secretary."

Blue Thistles.—"Howard," Charlottesville, Va. We suspect that this is not a thistle at all. If not too late, send a specimen. From the description given in your letter it cannot be the Canada Thistle.

Yield of Corn in Iowa.—J. E. Darby, of Madison Co., Iowa, expresses his surprise at the statement made by Walks and Talks, that the premium crop of corn in Ohio last year was only 51 bushels per acre, and that after heavy manuring. We may remark here that this statement was pronounced incorrect by a prominent member of the Ohio Board of Agriculture, but after investigation he admitted that W. and T. was right. Mr. D. says: "I have lived in New York and Ohio, and have farmed some ten years in this State. That amount would certainly be nothing more than an average yield here with very ordinary cultivation. I have noted the average of nearly every crop I have raised in this State, and with the exception of two years, one a very wet, and the other a very dry season, when the yield was about thirty bushels, my average has been nearer sixty bushels per acre than fifty, and this without manure, though manure does as much good here as elsewhere. Perhaps if your readers saw this statement they might be induced to leave the 'stones of Western New York,' and the stumps and swamps of Western Ohio, and try the windy prairies of Iowa."—We are always glad to present such facts. Nevertheless, we are satisfied that farmers need not be discouraged from attempting to get out the stones or remove the stumps, or drain the swamps, or undertake any other improvement of their present farms, because there is richer and better land in some other section. We would dissuade no one from going to the rich land of Iowa. We merely want to urge those who are there to improve their farms and not leave them because they hear of better land elsewhere. Our agriculture lacks stability.

The Hay Crop in Connecticut.—Mr. H. S. Collins writes us that the yield of hay this season is less than for the last two years. "That cold winter killed the clover and other filling, leaving the grass thin. I must plow up and re-seed. We are not on natural grass land here, but my grass usually averages from 2 to 2½ tons per acre. This year I fear it will be not over 1½ tons. I cannot put up with that. Fields cutting 3 tons per acre dropped to 1½ tons at once. I am sowing more tall grasses. Fine grasses do little on my land except on two drained pieces. But of rye grasses, orchard grass, timothy, and tall meadow oat grass, I can get large crops and steam them to advantage."—We think this a valuable idea. When all the fodder is cut up and steamed for the cows, with more or less meal, it is probably more important to secure a large crop of grass of even a rather inferior quality, than to get a small crop of a better quality. Where cows are kept on hay alone, without steaming, quality is more important than quantity.

Right and Left-hand Plows.—We continue to receive a great many letters on this subject. Most of the writers are in favor of the left-hand plows. We have no sort of objection to them. We presume they are just as good and just as convenient as the right-hand plows, but after reading all that our correspondents have said on the subject, we are not prepared to advise our readers to throw away all their right-hand plows. If we lived in a section where left-hand plows (that is to say, plows having the mouldboard on the left side of the plow) were used, we should use them, but as the writer has at ways been accustomed to right-hand plows, and can manage to turn a very fair furrow with them without any special difficulty, he sees no urgent reason for changing.

A Pig Lot at the South.—A Northern man who has purchased a plantation in Mississippi writes us: "How to map out a pig lot is one of my present anxieties. What will do North will not quite do for this climate."—We cannot help him. Better adopt the method of the country and improve it, rather than to strike out a new plan at first.

Floors for Cow Stables.—A gentleman in Connecticut, who keeps a large dairy and soils his cows, writes us: "I am exercised about a cow stable floor. Cement will freeze some cold snap and then scale. Is there no mixture of coal tar, ashes, etc., that will answer better and not be so strong smelling as to suffocate my animals? No ordinary coal tar concrete used on our walks would answer, but I am sure some mixture could be made that would do well. Chestnut planks rot in two or three years, and are expensive."—One of our editors paved his cow stable two years ago with stones, but as they were not evenly laid he drew into the stable a quantity of rather clayey soil and pounded it firm all over the floor where the cows stand, giving a gentle slope towards the back of the cows for the liquid to drain off. As he lives in the grain growing district he has plenty of straw for litter, and in his case this floor answers a good purpose. Stiff clay, put in wet and thoroughly pounded, will, when dry, make a floor almost as hard as a brick, and if it wears in holes where the cows stand, it can easily be patched up with more clay and pounded in. He does not know of any cheaper or better material for floors.



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Having increased the size of this Journal to 44 large pages, with the beautiful cover upon each number, the last point of cheapness would seem to be reached. But for the sake of securing at once the proposed 250,000 subscribers for 1870, we now put in an extra premium to every new subscriber received during September, as follows:

3 Months Subscription for \$00.00.

Every New Subscriber to the American Agriculturist for 1870 (Vol. 29,) whose subscription comes to us before Sept. 30th, will be presented with the paper the rest of this year without charge.

\$1.⁵⁰ Received during September will pay for this paper, for one new subscriber, for all of 1870, and for the last three months of this year, also!—(15 months!)

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The above offer will positively expire on Sept. 30, except in the few cases where subscribers are too distant to respond by that date. The names had better come right in at once, so as to be properly arranged before the next paper is ready for mailing.

Drouth Better than too much Rain.—A Kansas correspondent of the Country Gentleman writes: "Still it rains—it will average a rain every hour. My hay all rotted, barley has sprouted, and wheat is sprouting. Oats cannot be harvested. This all happens in dry, parched, sun-scorched Kansas, and it has been so nine out of twelve years. Give me a drouth; I can do better farming in a drouth than in a flood."—This is the true doctrine. It is what we have always asserted. We can do much to guard against drouth, but comparatively little against too much rain and too little sun. Underdraining will help, but we can do nothing without solar heat. The sun is the great motive power in farming; and yet from the complaints we usually hear, one would think that drouth was the greatest of agricultural calamities, while in truth a good farmer rarely suffers much ultimate loss from a dry summer. Some crops may suffer, but others will do well, and at any rate it gives him a good opportunity to destroy weeds, and get his land into good order for the next year's crops. Stock, especially sheep, "do better on roast meat than on boiled." The farmer will never be independent of the season, but he can do much to guard against the injurious influence of unpropitious weather. Fortunately the means best adapted to secure good crops in a wet season are precisely the means necessary to avoid the ill effects of a drouth. Underdraining is the first step, and thorough tillage and the destruction of weeds the next. No matter what the season may be, a well-drained and properly worked farm will always produce the best crops. But the good farmer will always do better in a dry season than in a wet one, and hence it is that we contend that our climate is admirably adapted for agricultural pursuits. The lot of the American farmer is fallen in sunny places. Never let us complain of drouth and heat.

Beecher's Sermons.—The sermons of the Rev. Henry Ward Beecher are published by J. B. Ford & Co., each week, in a neat form, convenient for reading and for preserving. We do not feel that we are advocating any particular sect when we commend Mr. Beecher's sermons. Mr. Beecher belongs not to any one denomination, but to the world, and men of all beliefs claim their share in him. When a large mind, coupled with a large heart, and both joined to a large body, speaks, one may be sure that there will be something worth hearing. It is remarkable that the sermons of one who has so much personal "magnetism," and who enchains his audience so completely, are so thoroughly enjoyable when read without the charm of the speaker's voice. In our corps we have some four or five widely different denominations represented, and they all unite in this commendation of Beecher's sermons. We sometimes wonder whether Mr. Beecher is greater in the pulpit than he is out of it. We enjoy an occasional visit to his church, but we still more enjoy his too infrequent visits to our office. If one is sad, he touches his sympathies. If one is joyous, he can find no one more ready to join him than H. W. B. Does one wish to talk horticulture, agriculture, art, literature, or religion, there is the same readiness. It is largely to the fact that Beecher is cultivated in all his faculties, and not a one-sided man, that his power is due. Let a naturalist try to catch him and he is ready for him. Let a Wall Street Broker take him up, and he knows all about Wall Street. He can talk to the boys at West Point or address a Peace Society, deliver a better horticultural address than any one we know of, and the next day preach a sermon worth hearing, worth printing, and reading and preserving and reading over again. We expect to get overhauled for what we have said, for our friend is—contrary to the general belief—a modest man. Let us have more Beechers.

Draining without Outlets.—E. N. Leighton, Lynn, Mass., wants to drain a lot (50 ft. by 100 ft.) without the expense of digging a drain across adjoining property. There is one chance in a hundred that he may be able to do it. If a well, dug early in the spring, will not be filled to within a few feet of the top during the wettest weather, then, by digging or boring deep holes at distances of 20 feet from each other, and filling them to within 2 feet of the surface with small stones, the drainage may be made complete. This system will work only when an impervious subsoil is underlaid by a very porous understratum which has a free outlet, so that water will at no time remain in it. Soils so circumstanced, no matter what may be their character, are almost always well drained naturally. Porous understrata usually have no outlet, and are themselves gorged with water in wet seasons, so that by tapping them we are more likely to get water than to get rid of it. If the bore-drain plan will not work,—and generally it will not,—there is nothing to be done in the case but to get an outlet, for without an outlet a drain is like a barrel without a spigot; you can get water into it, but cannot draw it off, and as underdrain, whether made of stone or of tile, filled with stagnant water, is worse than no drain at all.

Liming Sandy Soils.—“H. J. L.,” Al-
plie, Ga., asks: “Does it pay to use stone lime as a
fertilizer on sandy soils? How much should be used, and
at what season applied?”—On light sands with little
organic matter, lime may be used if applied in composts
with other enrichment. Mix 10 bushels of lime, slaked
with brine, with 40 loads of swamp muck or peat, leaf
mould or sods, and the whole with barn-yard manure
in any desirable quantity, and the lime will be found a
great benefit to the manure. Or turn in a green crop
whenever you can get one and put on 10 bushels to the
acre with it. We would not advise using lime by itself
on poor, sandy soils. There must be plenty of organic
matter or clay in a soil to make lime pay, except in very
small quantities—say 5 bushels per acre, every few years.

Potashes.—We learn from our old friend,
Titus Oaks, who has handled a good deal of potashes in
the course of his life, that the last potash establishment
in the State of New York or eastward stopped work a year
ago. A small business in ashes is done by country soap
boilers, but soda ash has taken the place of potashes in
soap-making to such an extent that house ashes are no
longer sought for by them to any great extent. The
result is that ashes return to the soil. They are either
retained upon the farms that grew the wood, or are sold
to farmers who collect them, paying cash or exchanging
soft soap as the soap men used to do.

Spreading Manure.—A. Reynolds,
Davisville, R. I., (referring to our statement that the best
way to store manure is to spread it evenly on the surface
of the ground where it is to be used), asks whether this
statement refers to all seasons of the year. It does, al-
though probably there would be a slight loss by evapora-
tion during very dry and hot weather. Even then, how-
ever, it is probable that the loss would be less than either
in the barn-yard or the manure heap. The formation of
ammonia—the escaping value of organic manure—is
checked as soon as by spreading it is prevented from heat-
ing—as only under the influence of heat is ammonia de-
veloped to any considerable extent.

Dry Tan-bark as Manure.—H. M.
Maxwell asks: “1. Has dry tan any virtue as a manure?
2. Is it improved by mixing with stable manure? or, 3, is
the manure so mixed deteriorated, and the tan not im-
proved? 4. Is the addition of salt any help to it?”—*Ans.*
—1. Yes. 2. Yes. 3. The mixture should be made and
laid up where it will heat somewhat and the whole under-
go a steady fermentation, being frequently wetted with
manure water. 4. It is difficult to speak positively about
salt; a small quantity in a compost is usually beneficial.

Chester Whites vs. Yorkshires.—
We need large sows to breed with small, high-bred boars,
that their progeny may be large and inherit hearty
digestive powers and great vitality from the dam, while
at the same time they have the small heads and bones,
little offal, and quick development, from their sires. The
Chester Whites are a coarser breed than the Yorkshire
or Jefferson Co. breed; they are of about the same size,
and probably as much hardier and tougher as they are
rougher; they are well clothed with hair, while the
Yorkshires are nearly naked; and on the whole we pre-
fer them for common uses, especially for producing a
stock of large breeding sows to be crossed with the finer
breeds, for 6 to 12-months-old pork.

Essex versus Berkshire Swine.—
“Arco,” “Where does the Essex claim superiority
over the Berkshire?”—The champions of these breeds
claim for them similar characteristics, though the
Berkshire makes much the larger hog. In economy of
feeding, smallness of offal, and quick maturity, we doubt
if the Berkshire, good as it is, ever excels the Essex,
though isolated cases may perhaps occur where from the
larger size a smaller percentage of offal will be found.

Poultry Stock.—An Important
Change.—G. H. Leavitt, of Flushing, L. I., a well-
known breeder of improved fowls, has now disposed of
his stock of poultry to Mr. G. H. Warner, of New York
Mills, N. Y., President of the N. Y. Poultry Society. It
does not often happen that two select stocks are thus
united, and poultry breeders throughout the country will
be glad to learn that Mr. Leavitt's stock has passed into
such good hands as those of Mr. Warner.

Hogs Eating Hen Dung.—“N.
W.,” of Bucks Co., Pa., writes, that noticing that his
hogs were ravenously fond of hen dung he threw them a
basket of corn, and one of hen manure immediately
afterwards. They left the corn at once, and devoured
the latter. He asks, “Is it probable that they would eat

the manure if it was not good for them? How does it
affect them? Will it destroy worms? Will it prevent hog
cholera?”—Hen dung is very rich in phosphates. Hogs
grow very rapidly and have use for this material for build-
ing up their bony frames. We think their food does not,
as a rule, contain a due proportion of phosphates, and
that were we to add ground bones in some form to their
feed, they would do better, and were “N. W.'s” hogs to
be so fed, they would soon lose their abnormal appetites.

Bar for Setting Hurdles.—On page
333 is a description of a neat hurdle or portable fence for
confining sheep upon rape, turnips, etc. The bar used
for setting the posts as there described is shown here-
with. It is a light crowbar about 3 feet long, with an en-
largement within a foot of one end, having in it a shallow,
cup-shaped cavity, which fits upon the top of the post,
and has a tendency to contract it and keep it from split-



ting. By using this as a hammer or maul, the post is
driven firmly into the ground, a hole being first started
with the point of the bar.

Nets for Unloading Grain.—Where
the Heading Harvesters or “Headers” are used, the grain
heads must of course be handled loose. S. W. Glenn, of
Leeland Co., Mich., inquires about nets used for unload-
ing by horse power, how they are made, etc. Nets are
used for unloading header-cut grain, and we would like
to learn the size of the cord and of the mesh, the size of
the nets and of the rope which forms their outer edges,
and the number commonly used upon an ordinary load.

Drains Near an Osage Hedge.—
“W. J. F.,” Chesterfield, Ill., wants to lay a tile drain
under an old Osage Orange hedge, and asks if the roots
will choke the drain laid 4 feet deep.—*Ans.*—It depends
almost entirely upon the amount of water that flows
through the drain. If it runs several months at a time,
the roots will probably find it out, and be likely to fill it.
If, however, it only runs during and after rains, there
will be little danger. The difficulty may probably be
avoided by laying the tile in cement,—at least cementing
the joints for a rod on each side of the hedge.

Roots in Drains.—Linville Ferguson, of
Bentonville, Ind., has had difficulty from the choking of
his tile drains by the roots of trees and even of wheat, and
he fears the same trouble in a new vineyard. There is
no absolute remedy for this if the drains carry water at
all times, but the deeper they are placed the less the
danger, and it is not likely that the roots of wheat will
ever reach 4-foot drains. The roots of trees sometimes
will, but not nearly so soon nor so frequently as they will
those only 2½ feet deep, which seems to be the depth of
those complained of. On any land that is fit for vine
planting, 4-ft. drains will not be troubled by the roots of
any but water-loving trees, and these should be excluded
from the vicinity of a vineyard for more reasons than one.

Substitute for a Boy.—Fence Mak-
ing.—Mrs. M. C. Ross, of Warsaw, Ill., writes: “My
husband, having some fence to build, and no one to
assist him, a neighbor remarked that he ought to have a
boy to hold up one end of the boards, but having no boy,
he set his wits to work to make a substitute. Taking a
piece of 4-inch board one foot in length, with a 1½-inch
augur, he bored holes, one 2 inches from one end, and
the other 4 inches from the other, split the holes out
to the ends, and trimmed the slots smooth. After the
bottom plank was nailed on, the longer legs were
“straddled” over it, ready for the next plank to be laid
in its arms. This held one end while he nailed the other,
and possessed one advantage—it never tired, and kept the
boards an uniform width apart.

Live-stock in Ohio, 1868 and '69.
—From a “Tabular Statement” from the office of the
State Auditor, exhibiting the numbers of live-stock re-
turned for taxation from each county, we deduce the fol-
lowing: There has been a gain of 4,203 horses, a decrease
of 20,083 cattle, of 291 mules, of 1,416,203 sheep, and of
357,629 hogs.

Connecticut Agriculture.—We have
received from Mr. T. S. Gold, Secretary of the Board of
Agriculture, his report to the General Assembly for 1868.
Besides the matter usually found in such documents, it
contains the reports of interesting discussions, lectures,
and essays on grass lands, pastures, meadows, etc., which
gives the volume especial value. Besides, the now
famous report of Professor Johnson on sundry samples
of fertilizers taken in the open market and submitted to
his analysis is contained in this volume. The book

ought to be for sale, and so ought every one of its class.
Few people value a book that is given away. At a price
that would cover the cost, and a little more, ten times as
many would be read.

How to Keep Milk Sweet.—“Sub-
scriber,” of Salt Lake City, asks: “Is there any harmless
article which may be put into milk to keep it sweet
longer than it would keep of its own accord?”—Common
bicarbonate of soda—cooking soda—is sometimes used
in small quantities, but it is hardly advisable, as it forms
an excess of lactate of soda. Cooling the milk rapidly,
as soon as drawn, to a temperature of about 60° or
less if convenient, will accomplish the same end.

Samuel F. Headley.—Col. Samuel F.
Headley, of Morristown, N. J., died at his residence July
25th, in the 62d year of his age. In the sudden death of
Col. Headley, the cause of Agriculture, the *American
Agriculturist* and its readers, sustain a heavy loss, which
comes home to the editors and publishers of this journal
as a personal bereavement. We have long known Col.
H. as a thorough farmer and a careful and enthusiastic
breeder, a close observer of nature, a man of broad views
and excellent judgment, of great industry and an indom-
itable will. He had remarkable business shrewdness
and tact, a great knowledge of men, and quick discern-
ment. We valued his friendship greatly, and his honest
criticism was as acceptable as his praise. Col. Headley
was educated a lawyer, studying with Judge Grier of the
U. S. Supreme Court. He practiced his profession suc-
cessfully for many years, was influential as a politician,
and had the confidence and friendship of many distin-
guished men of both parties. Earnest in pushing all
improvements, he accepted the superintendency of the
Morris & Essex Railroad in 1854, and afterwards of the
N. Y. & Erie. At the time of his death he owned seven
farms, most or all of which were conducted under his
personal supervision. He was the first to introduce Im-
proved Short-horns (Durhams) and Berkshire Swine
into N. E. Pennsylvania, and always took great interest
in improving the breed of horses, keeping fine stallions
and jacks, the services of which he shared with his neigh-
bors at merely nominal charges. Of late years he has
taken much interest in the Chester Co. breed of hogs, and
has been engaged for some time in collecting facts in re-
gard to swine, with a view to publish a hand-book on the
subject. He built, as owner, five grist-mills, and was be-
sides at one time largely interested in iron mills and
manufactures. His usefulness was not confined to profit-
able business matters, and he was no less enthusiastic
and energetic in showing his interest for all good objects,
for the Church of Christ, the temperance reform, the
Sunday-school cause, etc., etc. His place can not now
be filled, and he will long be remembered to be honored
and mourned.

**Questions for Maple Sugar Mak-
ers.**—A Vermont sugar maker, who signs himself
“Young Farmer,” asks through the *American Agricul-
turist* the following questions: “1. Is it best to use a
large augur or a small one? 2. Is it best to put one spout
to a tub and two tubs to a tree? or two spouts to a tub
and one tub to a tree? 3. What is the best form of
spouts?”—The maple sugar crop is one which is, though
not large, of great value to the country, for it is a home
product, costing little labor, employing it at a season
when it is not demanded for other farm purposes, and one
which may be greatly increased, made a reason for pre-
serving and cultivating forests, and causing now unpro-
ductive rocky hill-sides to be planted with sugar maples.
We are glad to encourage maple sugar making in any
way, and hope our young farmer may receive numerous
responses from practical men.

**Agriculture in the Literary, Po-
litical, and Religious Press.**—While the “Farm-
ers' and Gardeners' Column” in many newspapers now-
adays is a delusion and a snare, a confused jumble of
scissored, and chiefly useful as a source of amusement,
and as an evidence to farmers that their dollars are ac-
ceptable to the publisher, who thus pats them on the
back, yet in others it is very well conducted, and one
whose business it is to be familiar with current agricul-
tural literature cannot ignore the fact that some able
writers thus find employment for their pens. Witness
Mitchell's articles in the Atlantic, awhile since, Elliott's
in the Galaxy monthly, Olcott's in the Connecticut Cour-
ant, and a host of others we might mention. As a sign
of the times it is most significant. The agricultural press
was never half so well conducted nor so influential as to-
day—perhaps, in a measure, because its best productions
are so widely circulated by being copied into the farmers'
columns; perhaps, also, because the necessity is felt to
show itself superior to those, so to speak, non-profes-
sional writers, whose agricultural ideas are mutilated in
the daily and weekly newspapers. At any rate, we re-

joice in every true word that is written to favor progress and extend knowledge in agricultural and kindred matters. Much, however, that is written, deserves severe criticism, and but for the fact that there is so much of it, many of the "Farmers' Columns" would be well cut up; as it is, the agricultural papers have no time either to commend or condemn.

"Tame Grass" for the Minnesota Prairies.

— John O. Oien, Freedom, Minn., says: "Please tell us which is the best tame grass for the Minnesota prairies. Soil black, 2 to 4 feet deep; clay sub-soil."—We have great faith in red clover and timothy, but never having lived in Minnesota, there may be something more highly esteemed there. If the timothy grows too rank, cut it the earlier. The clover will give you but two crops, one a full one, the second small, the timothy taking the lead, and with other native grasses holding the soil for some years, and making excellent hay.

Stocks for Cherries.

— "E. Y. T.," Richmond, Ind., writes: "Much has been said as to the comparative merits of the Mahaleb and Morello cherries as stocks for working the improved varieties upon. I have quite a number of trees bearing this year, near a bushel each, about one-third of them on Mahaleb and balance on Morello stocks, and we can see no difference in the productiveness of the trees. A neighbor who has a few Early Richmond on Mazzard stocks in his orchard, with others on Mahaleb and Morello, finds the trees on Mazzard to produce only a dozen or so cherries each, while those on Mahaleb and Morello yield near a half bushel each, the age, soil, and culture being the same."

"Pear Culture for Profit"

is the title of a work by P. T. Quinn, which is published by the N. Y. Tribune Association. When one has been at work upon any one thing, and has seen, so to speak, its "ins and its outs," we like to hear what he has to say. Hence it is with no ordinary pleasure that we have read Mr. Quinn's work. Mr. Quinn does not come forth as a pomologist and discuss the minutiae of varieties; he sensibly leaves that to others, but he does in this work tell how he grows pears and how he has made them profitable. We have long known Mr. Quinn as a pear-grower, and we have every confidence that what he may say is true according to his experience. The work will of course soon be in the hands of all pear-growers; but we quote as very timely the following instructions from his chapter on packing and marketing the fruit.

"Fruit does not differ from other articles of merchandise; its good appearance goes a great way, and 'covers a multitude of sins.' Choice specimens should not be placed on the top of the barrel; for purchasers usually 'empty packages,' and if the fruit grows smaller in size and inferior in quality as the bottom is neared, every one knows to what decision the buyer will come. That brand will not be sought for by the same party the second time. On the contrary, if the fruit is uniform in size throughout the barrel, not only is the same brand bought again, but it becomes known in the market; it will always command the highest price, and will sell readily, when the same kind of fruit, carelessly packed, is comparatively worthless.

"In every case, no matter how small the quantity of fruit to be sold, pack in clean, sound barrels or boxes. It is certainly poor economy to save ten cents in buying a second-hand flour barrel, when you are sure to lose more than five times that amount on the price of the fruit, by having it packed in a soiled barrel instead of a new one.

"When the fruit attains the proper stage of ripeness for shipping, pick the pears by hand and put them into baskets. Then take a barrel, turn it upside down, and remove the bottom by driving off the hoops. Place some cheap white paper inside over the lid and around the sides,—fruit looks better when the barrel is thus lined. The pears are then laid on their sides closely together, until the top of the barrel is covered. A second layer is added, in the same way as the first. Continue in this way until the barrel is one-third full; then shake gently so that the fruit will settle without being bruised. This shaking should be repeated several times until the barrel is full, when the pears should be in such a position that the bottom of the barrel, when pressed in, may come in direct contact with the last layer. The hoops should then be put on, and four small nails driven through them, to keep them and the bottom in place. The barrel may be marked 1, 2, or 3, so that the consignee may know the quality of the fruit without opening each package; although he should always be advised by mail of the number of packages and the quality of the fruit shipped.

"We send the larger part of our pear crop to market, packed in new half barrels, and, as a general rule, it commands a higher price in these packages, especially if the fruit is very choice.

"The retailer, fancy fruit-dealer, and hotel keeper, buy those packages in preference to the larger ones. If half-

barrels are used, pack the fruit the same as in barrels.

"When the cover is taken off from pears packed in this way, each pear lies close in position, the appearance presented is inviting to the purchaser, and the highest market price can be readily obtained for them. It requires only a very little practice to become quite expert in packing fruit in the way described. When baskets are used, they should be lined with white paper, and the pears laid in carefully. Shake the basket gently, occasionally, so that the fruit may settle, and fill the basket a little above the rim; then put on the covers and forward the fruit with as much care as possible to its destination.

"It is not desirable, however, to send fruit in small baskets, unless the grower delivers his own fruit to the dealer. In sending baskets by railroad or steamboat, the fruit will be stolen from the baskets, and it is a difficult undertaking to get redress from such corporations for losses of fruit."

We have given an unusual space to this matter of packing fruits, but it is the point upon which the success of all fruit culture depends. We might have quoted Mr. Quinn's whole chapter on packing fruit, but we have given enough to show its sensible tenor. Mr. Q., with that modesty which is characteristic of those who are born in the Green Isle, has until now abstained from putting his valuable experience into print. We gladly welcome his first effort, and hope that he will not feel satisfied with this, but give us other practical works.

A Word to Farmers About Selling their Produce.

Farmers are often blamed for not selling their produce as soon as it is ready for market. And it must be confessed that those who do so, taking one year with another, do quite as well, all things considered, as those who hold on in hopes of getting higher prices. They obtain their money soon after harvest, and are enabled to use it to advantage. Dealers in grain can obtain money much more easily than farmers, and can consequently hold the grain longer.

While, therefore, we think farmers often do better by selling early, there is still room for the exercise of judgment. One reason why it is usually best to sell early is, that most farmers are disposed to hold on to their grain as long as possible, and when the time comes that they must sell, there are more sellers than buyers, and the price declines.

It is a curious fact that people generally are more inclined to sell when prices are low than when they are high. When wool was 80 cents a lb., it was more difficult to induce farmers to sell than when it was 40 cents per lb. Last fall, with red wheat at \$2.25 in the interior of Michigan, farmers hesitated longer in making up their minds to let their crops go than they did last summer when they were offered \$1.25 for the same wheat. It is a good rule to sell when you can get a price that will afford a good living profit. Farmers, at the present time, would have been richer by millions of dollars than they now are had they adopted this rule last autumn. We know of a great many who sold wheat this summer for one dollar a bushel less than they refused for it last fall. The whole nation suffered greatly by this indisposition to sell when a good price could be obtained. We might have shipped all our surplus wheat to England at a fair price, but by holding on we lost the opportunity, and finally sold at a price below the cost of production. We should take the lesson to heart.

On the other hand, when prices are low, we should not be in a hurry to sell. Sound wheat is an article that will keep, and it is an article that is always required, and it is absolutely certain that it cannot long remain at a price much below the actual cost of production. We cannot hold out hopes to such farmers as grow only ten or twelve bushels of wheat per acre, that they will obtain prices sufficient to compensate them for their labor. The country must be in a very unsatisfactory condition when such is the case; but we do firmly believe that there is no reason to doubt that a farmer who raises good crops is safe in calculating that sooner or later he will be able to obtain such a price for his wheat as will enable him to make a fair profit.

There is one fact in this connection that should not be overlooked. In a cool, wet, late season in England, the wheat crop is always below the average. And they have had such a season the present year. On the other hand, it is very doubtful if the wheat crop of the United States is as large as was anticipated. We feel tolerably certain, therefore, that before another harvest, wheat will bring a price sufficiently high to afford the wheat grower a good living profit. He should be satisfied with this. He should be in no hurry to take less.

The question arises: What price should we obtain for wheat, to afford us a fair profit? At the present price of implements, machines, and other necessary articles, not forgetting labor and taxes, we shall not obtain extrava-

gant profits if we sell good, sound red or amber winter wheat—say in Michigan—for \$1.50 per bushel. A farmer who raises anything less than twenty bushels per acre will not get very rich, even if he obtains, in our present currency, \$1.75 for red wheat, and \$2.00 for choice white wheat. When we can get these figures in ordinary seasons, it is not safe to hold on too long; but when, immediately after harvest, the price is much below these figures, those who can afford to hold their wheat run a very little risk of loss in doing so.

Death to Half-bred Males.

Many a man is tempted by the beauty and promise of a half-bred bull calf to keep him for the perpetuation of his good qualities. This would be very well if only there were any hope of his doing it with even tolerable certainty; but there is not. The result of using such an animal as a sire is generally most unsatisfactory. The cloven foot of a mongrel ancestry will constantly show itself in the most provoking manner, and there is really no safety, if we wish to improve our stock, except in destroying at least the virility of every bull calf that has not a *clean recorded pedigree*. We sometimes hear it said of an animal that "he carries his pedigree in his horns and in his hide." There can be no greater nonsense than this. The only pedigree of an animal that is worth anything is a positive knowledge that for many generations no strain of impure blood has been allowed to creep into his veins. This given, then seek for the most perfect development of every valuable quality; but without this, the highest type of outward appearance may be only a snare and a delusion. As a case in point, we know a grade Jersey cow,—three-quarters Jersey, and one-quarter Ayrshire—that, by a thoroughbred Jersey bull, had a calf which would have passed muster in a herd of pure Ayrshires. The strain of Ayrshire blood—itsself thorough blood—for once asserted itself, and took possession of the field, although the earlier and the later calves of the same dam had all the look of the Jersey.

Commercial Fertilizers—Honest Dealers.

Many of us at one time or another have experienced extraordinary profit in the use of some kind of commercial fertilizer. We know that barn-yard manure, hen manure, bones, ashes, land plaster, and lime, are the stand-bys, but we are habitually short of these, at least of all but the last two, and the necessity for supplying their place drives thrifty farmers, as well as unthrifty ones, into the fertilizer market. Here we buy we know not what, as school-boys trade jack knives, on "unsight-unseen," trusting entirely to the representations of those who are interested to sell. If we get too little for our money there is no redress. We cannot prove fraud because the fertilizer does not fertilize our land, for it may be tried on our next neighbor's, and if it contains even one ingredient greatly needed, it may produce excellent effects. It is therefore very desirable that a traffic which is so necessary to the farmer, and in which there is almost unlimited opportunity for fraudulent dealing, should be conducted under reasonable checks. In Maine a recent law (for which, we doubt not, the farmers thank our excellent friend S. L. Goodale, formerly Secretary of the Board of Agriculture of that State), requires every manufacturer and seller to have the chemical composition of the fertilizer, so far as it concerns its value as a manure, stated upon the bag or barrel in which it is sold, and the parties are held responsible for the article coming up to the

statement. This, if faithfully carried out, accomplishes two things—the manufacturer knows what he sells, and the purchaser knows what he buys. In Connecticut another plan has been pursued. Here there is no intervention of law, but the Secretary of the State Board of Agriculture collects manures which he finds for sale, has them analyzed, and publishes their composition, price, and the value which the chemist's analysis indicates they possess. This makes a stir among the manufacturers and dealers, as might be imagined. They would not so much object to the publication of the analyses, but to come out and say officially that fertilizers which they sell at \$55 to \$60, or even \$80 a ton, are not worth more than \$18 to \$25—this is too much; it is too easily understood. By some *hokus pokus*, a farmer might be made to believe that a lack of one component is counterbalanced by a great supply of something else, but when each ingredient has a value given to it and all the values are summed up and the worth of a ton set down, there is no escaping the verdict. The importance of having a correct verdict, just towards the manufacturer and liberal towards the farmer, is apparent. One maker has issued a circular, stating what the various ingredients cost him, according to which the price asked for his fertilizer would not be extravagant. What knowledge has the public that he did not pay or allow too much for them?

Let us try to arrive at a just valuation for the four substances that constitute the chief value of our commercial fertilizers. These are, 1st, Ammonia or available Nitrogen; 2d, Phosphoric Acid, in a soluble form, called Soluble Phosphoric Acid; 3d, the same in an insoluble form, called Insoluble Phosphoric Acid; and 4th, Potash. Besides, the value of a manure does not depend solely upon its chemical composition; other qualities are considered, for instance, its condition of uniform fineness, of dryness, that it may easily be handled and mixed with other fertilizers or with earth, and its freedom from weed-seeds, which last all should possess absolutely. The agricultural value of manure has nothing whatever to do with what is a fair price for it, except so far as the relations of supply and demand raise or lower the prices of all things. Each of the valuable ingredients has a fair market price. If the farmer chooses, he may buy and prepare for himself. It is fair that he should know as nearly as possible how he may supply himself with fertilizers at a less cost, if it can be done.

AMMONIA.—The sources of supply to the market are few and limited. All common substances containing nitrogen may be regarded as supplying ammonia to the soil. Nitrogen in nitric acid, as it exists in saltpetre and nitrate of soda, may be used as a manure, but in this form is usually far too expensive. Peruvian guano contains 14 to 17 per cent of ammonia; good fish manure a little more than half as much—say 8 to 8½ per cent. Peruvian guano has, for many years, been the cheapest and best source of ammonia, and so it still continues. It contains, besides ammonia salts, about 2 per cent of potash, 3 per cent of soluble phosphoric acid, and about 12 per cent of insoluble phosphoric acid. To come at the cost of the ammonia we must deduct the value of the other things. Take 4 cents a pound as the value of potash, 4 cents as the value of the insoluble phosphoric acid, and 14 cents as that of the soluble phosphoric acid. A ton of guano contains about 40 pounds of potash, worth \$1.60, 240 pounds insoluble phosphoric acid, worth \$9.60, and 60 pounds soluble phosphoric acid, worth \$8.40, altogether \$19.60—call

it \$20. Peruvian guano sells now at about \$80, currency, per 2,000 pounds; deduct \$20, and we have \$60, as the price of the 300 pounds of ammonia, making the ammonia 20 cents a pound. This is now a fair price for Ammonia or its equivalent wherever it occurs in commercial fertilizers.

PHOSPHORIC ACID.—The commonest source of supply is bones. There are several "phosphatic guanos" and mineral deposits which may be bought either simply ground or "manipulated," and a vast deposit of phosphatic material, the remains of ancient animals, has recently been brought to light near Charleston, S. C. "Bone-dust," coarsely ground boiled bones, may be bought for \$30 a ton, of 2,000 pounds. A ton of it contains on an average about 60 pounds, or \$12 worth of ammonia, which makes the 450 pounds of insoluble phosphoric acid, which an average sample contains, worth \$18, or 4 cents a pound.

SOLUBLE PHOSPHORIC ACID is made from the insoluble (bone) phosphates, by mixing them in powder with a certain quantity of sulphuric acid (diluted oil of vitriol). This adds both to the price and to the efficiency of the phosphoric acid. If we consider the cost of the soluble phosphoric acid to be three times as great as the other, 12 cents per pound would be fair, and any farmer may produce it for that price, if he will make up one or two tons of bones. However, as it forms a staple article of manufacture, and has to sustain the reputation of its maker, we add 2 cents per pound to this, and set down 14 cents as the value of soluble forms of phosphoric acid.

POTASH is so widely distributed that it has only a moderately high agricultural value. As a fertilizer it hardly exists in market, the potashes of commerce bearing too high a price for them to be used as a fertilizer. Good potashes are worth 7 cts. per pound at wholesale; they contain not less than 75 per cent of real potash, which would therefore cost about 9 cts. per pound in this form. The available source of supply to the agriculturist is wood-ashes, and these contain other ingredients of value to the farmer, especially several per cent of phosphoric acid. We learn from a gentleman of large commercial and practical experience that a bushel of "house-ashes" weighs about 48 pounds on an average, and that several potash makers who have boiled lye for many years agree in the opinion that they do not yield more than about 4 pounds of potashes to the bushel, which would be 3 pounds of pure alkali. These practical men agreed within a pound or two in regard to the average weight of the bushel. One was from Vermont, one from St. Lawrence Co., and one from Buffalo, and their experience covers a period of 70 years down to one year ago. Ashes made in the open air weigh lighter, and hardwood ashes contain much more potash than those of soft wood. The price per bushel for ashes has varied a good deal, but at 12 cts. per bushel, which has been and is a sort of standard price, we pay 4 cts. per pound for the potash and get the phosphates thrown in. Allowing 4 cts. per pound for the phosphoric acid, we can afford to pay as high as 20 cts. per bushel for good ashes, if we cannot get them less.

A good analysis of a fertilizer will show clearly the relative quantities of the substances we have considered. However, some analyses will state *nitrogen* instead of ammonia superphosphate of lime, or *soluble phosphate of lime* instead of soluble phosphoric acid, and phosphate of lime or bone phosphate or *insoluble phosphate of lime* or earthy phosphates instead

of insoluble phosphoric acid. A good analysis, then, is the indispensable thing, and buyers have need to know that the analysis is a correct one, and this should be guaranteed.

We arrive, after these calculations, at the following scale of prices, which we believe to be liberal, both towards the farmer and the dealer in fertilizers. If the farmer really knows what he wants and gets it, he can well afford to pay the prices we give—while the manufacturer and dealer can invariably buy at so much lower rates, that we think if they buy well and sell at the figures we give, they will make handsome profits.

SCALE OF PRICES.

	Value.		Value.
Ammonia.....	20 cts.	Nitrogen.....	23½ cts.
Soluble Phos. Acid.....	14 "	Sol. Phos. of lime.....	8½ "
Insol. Phos. Acid.....	4 "	Insoluble Phosphate	
Potash.....	4 "	of lime, (less than).....	2 "

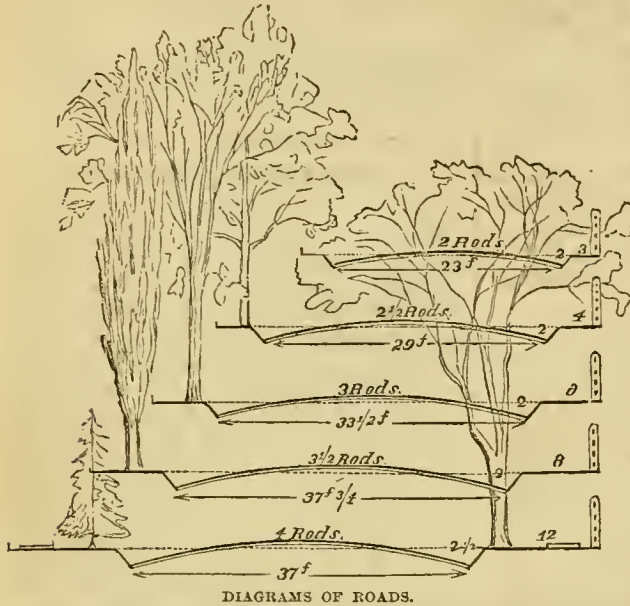
Roads and Road-making.—No. 3.

The title to the highway is usually vested in the original proprietors, and when a change of title in the land takes place, and the ownership of one side passes into other hands, in the case of roads which were originally laid out across an estate, deeds are usually given to the middle of the road. It is therefore almost universally the case that adjoining proprietors, separated by a highway, own the road between them. This property is given up to the public for the purposes of a highway, and the owner cannot obstruct this use. The width of roadway proper, the position and width of the ditches, the position of trees standing in the highway, etc., are not under the owner's control. All crops, however, grass, fruit, etc., belong to the proprietor of the land; they are not public property any more than if they were on the other side of the fence. All highways should consist of a road-way, or traveled path, of determined width, for wheel vehicles and animals, a ditch on each side of this where it is needed, or wherever it is possible to have it, and a fence strip on each side. The width of these several parts of the highway depends upon its total width, and upon the condition of the land through or over which the road goes, and within certain limits should be determined by law, or by vote of the town. In making or mending the roads these dimensions should be rigidly adhered to,—the side strips not touched, the ditches made no wider nor deeper than the rule requires, the track neither narrower nor wider. The gradual filling up of the ditches will afford material suitable for mending the sides of the road, but rarely such as ought to be used for the top, except where there is a great dearth of gravel. We are particularly strenuous about the side or fence strips being untouched, because where this is uniformly the case the inhabitants will take pride in keeping them well, cutting off the brush, removing stones, etc., grading them, and keeping them in grass, which should be either fed off close or frequently mowed. Landowners will take pride, also, in setting out trees near their dwellings at least; and frequently those will be found who will line the highways for miles with shade trees, provided they feel sure that the road-master will not order gravel to be dug under the roots, or the trees to be sacrificed for some whim of his.

The width of our country roads is usually established by law within certain limits. Still the commissioners will often accept, for the public, roads of any width, and as these remain unaltered, there can hardly be said to be any uni-

form width for country roads. We can hardly conceive it proper for a public highway to be less than two rods (33 feet) wide. Many roads are narrower, but even this width is inconveniently small if a road is much traveled. For merely practical purposes, a road two and a half rods wide is almost always wide enough. In thickly settled neighborhoods, if the traveled road be not less than two rods wide, as much space may be taken for side-walks, lawn, etc., in the side strips, as may be agreed upon.

The accompanying diagrams exhibit cross-sections of roads of different widths, from two



DIAGRAMS OF ROADS.

rods to four rods wide. They represent such roads as might be made through a rolling country, not liable to wash. The two-rod road is too narrow for shade trees standing in the highway. Space may very well be afforded them in the two-and-a-half-rod road, and in the broader roads they are almost a necessity, for a part of the use of these roads is their beauty, and they would look naked and dreary without them, if kept in good order. In the diagrams, we allow about two feet for the width of the outer slope of the ditches, and suppose the road to be so graded that it rounds up evenly from the center of each ditch. In the four-rod road, side-walks will be seen outside the belts of grass, which are 12 feet wide, and afford abundant room for forest or fruit trees, alternating perhaps with evergreens, which may be cut away after a few years if they take too much room.

Tim Bunker on Chips.

MR. EDITOR.—Hookertown is a pretty quiet sort of place, generally, but just now we are having a big swell in our waters, and it is all about chips. I wish we could have had the fellow that makes pictures for you up here yesterday; I guess he'd 'a died a laughing, and camp-lor wouldn't 'a brought him to. We haven't had such a time since my subsoil plow first came to town, and the great chip machine has taken the shine all off of that. If Mr. Hoppin could only put that on to paper, somebody would burst their waistbands, or I'm mistaken. You see, the way it happened was just this. Deacon Smith, you know, is a pretty cute man, and means to keep up with the times, and get ahead of them if he can. He got ahead of them about one generation, I guess, when he went into the peat speculation two or three years ago. It looked well on paper. Coal was

thirteen dollars a ton on Hookertown street, and peat could be manufactured and sold for half the money, and make large profits. The Deacon bought a fifty-acre peat swamp, of unknown depth, and went in. By the time he got his machinery in, and got nicely to work, coal went down *kerchug*, like a bull-frog into a pond, clean out of sight. There was no trouble in making the peat bricks, and in burning them, but they would not sell at a profit when folks could get coal for six dollars a ton. So Tucker and Jones, Jake Frink, and the rest of that tribe, begun to laugh at the Deacon for his great peat failure. They thought the Deacon was flat on his back, and wouldn't come up again, but I knew he would. You see, Deacon Smith is the most sot man in town, believes in the decrees, and had no doubt that there was money in that peat bog for him, if he could only get at it. When the peat failed he thought of cranberries, because they grew in small patches all around the swamp. But to make a cranberry plantation, the whole surface had to be cleared of brush and bogs, and covered with gravel, which was a big job, and would cost three or four hundred dollars an acre. He got wind of a machine that would cut brush just as a hay cutter cuts up cornstalks. He thought he had brush enough to pay for the whole expense of clearing and planting, if he could only git it

into shape to be handled. He bought his machine, got it into the factory he put up for peat making, and turned on the steam yesterday. It was like a huge cornstalk cutter, only a great deal stouter, and would cut off sticks three inches through, and make no fuss about it. They poked the brush right into the jaws, big end foremost, and the chips flew in all directions. The brush was all chewed up into the nicest kind of kindling-wood, in short order. The Deacon fairly laughed to see the chips fly.

"Give it to 'em, shillalah!" cried Patrick, as he brought on the brush and fed the machine.

"A great cracking among the dry bones!" said Seth Twiggs, as he took a dry chip and lighted his pipe at the fire.

Uncle Jotham Sparrowgrass poked his cane into the pile of chopped brush to see that there was no mistake about the chips. He admitted that he had never seen anything like it on the Island, but thought it wouldn't amount to much. "It's another of the Deacon's humbugs, see if it ain't."

Jake Frink, who had just come from the tavern, began to sing, "Molly, put the kettle on, We'll all drink tea." Mr. Spooner wanted to know if the chips would kindle coal fires as well as charcoal.

"Guess the old peat bog'll come to suthing arter all," said George Washington Tucker.

"The Deacon is a master man to carry his piat," remarked Benjamin Franklin Jones.

"Yes," said Jake Frink, "but you could always carry a quart better than he could a gill."

"Charcoal has gone up," remarked Jones, maliciously, to a group of White Oakers, who looked on with mouths agape, as they saw the pile growing rapidly.

"No more charcoal wanted, I see," responded Kier Frink, for the company, as he pulled a soiled bandana from his hat crown, and wiped

his nose. "This is jest the hardest world a feller ever got into. Jest as you git started in business, somebody comes along and knocks your heels right out from under you. Wood used to pay pretty well, but coal spoiled it. And now they've got to making chips by machiary. Every old woman will be crazy after Smith's chips, and you can go the whole length of Hookertown street crying 'charcoal,' and not sell a bushel a day. White Oakers'll have to move away, or starve."

Nobody except Kier's company seemed to feel very bad at this prospect. The Deacon's figuring on chips looks very well, and he says they are already doing a good business in this line, over west of the river, where he got his machine from. He calculates that a brush swamp will yield from two thousand to seven thousand bushels of chips. It will cost about three cents a bushel to cut the brush and run them through the machine. They sell readily at eight cents a bushel, wholesale, and ten cents, retail. These chips are the best thing yet used for lighting coal fires, and are so handy in summer for making quick fires, that many will buy them who use their own wood for fuel. It costs less than to draw their own brush and chop it with an axe. Some are buying up cheap, rough lands covered with brush, just for the sake of the chips they will make, and they find it a paying business. If an acre yields five thousand bushels, the gross receipts, at ten cents a bushel, are \$500, which will pay for a good deal of labor. If there is only four cents profit on a bushel, it makes \$200 on an acre. The prospect for the White Oakers is by no means so gloomy as Kier Frink would have us believe. If they would stop cock-fighting and drinking rum long enough to buy a brush cutter, they might turn their rough lands and swamps to better account than growing wood for charcoal. A new machine only costs \$1,000, and three horses will run it. But it makes better work with more power, and there are still plenty of idle streams. It not unfrequently happens that the swamp that furnishes the brush affords a brook quite large enough to turn the machinery. This machine will remove one of the serious obstacles to the growing of cranberries on peat bogs. These swamps are generally covered with brush, and often with a heavy growth of wood. It costs from \$100 to \$200 to get the brush off, in the most rapid and wasteful way, by cutting and burning upon the ground. If, now, the clearing can be made to pay a profit in the chips it yields, many will think seriously of planting these wastes with cranberries. The chips are already a fixed institution in some of our cities and villages, and those who have used them will never go back to charcoal. No paper is needed. A match will light the fine twigs, and the larger ones give body enough to the fire to kindle the coal. These chips are now sent by the car load to our city markets, and are likely to affect the kindling-wood men even more than the charcoal burners. If housekeepers can get a bushel of kindlings for ten cents, they will not pay twenty-five for a coarser article of pitch, or yellow pine. Deacon Smith is mightily tickled with his machine, and walks round straight as a ramrod. His horse drives up prompt every Sunday morning to the meeting-house and seems to say "chips." The new harness and carriage are "chips" from the same block. In a little while I expect we shall not see a coal cart in all Hookertown.

Hookertown, Conn., } Yours to Command,
Aug. 15th, 1869. } TIMOTHY BUNKER, Esq.

Imitative Insects.

It is a curious fact that while there are a number of flowers which become conspicuous from their resemblance to insects, there are many insects which strive, so to speak, to render themselves less noticeable by assuming the form of some part of a plant. One of the most striking of these, and one of which several specimens have been sent to us, is the Walking-stick, the commonest species being *Diaphomera femorata*. The long, cylindrical, wingless body of this insect is supported on slender legs, and appears so much like a twig as to easily escape observation. It will be readily recognized among the others in the engraving. Many of our crickets, the katydids and the like, have very leaf-like wings, which are of a green color, and make them very inconspicuous among the foliage. The East-Indian Walking-leaves (*Phyllium*) far outdo any of our insects in their resemblance to leaves; with these the imitation is almost perfect. On the right-hand side of the engraving is shown one of these, but there are others of still more grotesque forms. The Museum of Natural History (Prof. Agassiz's) at Cambridge, Mass., contains some remarkable specimens of these insects. Our "Rear-horse," or Mantis, we bring into this company of odd insects; it is shown in the center of the engraving. The body of this insect appears like the leaf or twig upon which it is placed, while its elongated chest and remarkable fore legs give it a most quaint appearance. These are among the insects worth cultivating, as they are most carnivorous fellows, and feed only on other insects, except food be scarce, and then they eat one another. We undertook to raise a lot, but they ate one another until there was but one left, and we have a suspicion that he ate himself. Our Mantis is found abundantly as far north as Washington and Southern Illinois, and it would be well if it could be acclimated elsewhere. A very curious butterfly, which possesses a remarkable protective resemblance, is found in Sumatra. We do not know its common name, but it is the *Kalli-*

ma paralekta of entomologists. The upper surface of the wings of this butterfly is of a rich purple, marked with orange and ash color, making it conspicuous while on the wing, but when it alights it is rarely to be found. It rests with its wings closely folded together, with all other parts but its legs concealed. The under

pouch, where they attach themselves to the teats and there develop. After the young are able to take other food than that afforded by the mother, the pouch serves them for a place of refuge. There are some thirty odd genera of pouch-bearing animals, and, singularly enough, all, except the one of which our Opossum is the representative, belong to that most singular of all lands, whether we regard its animal or its vegetative products — Australia, and the neighboring islands. The Great Kangaroo (*Macropus major*) is not only the largest of the Marsupials, but the largest animal found in Australia. The engraving gives the general appearance of the animal. It has a remarkable development of the hind legs and tail, while the fore legs appear ridiculously small. The animal when in an upright position rests upon its



THE WALKING-STICK, MANTIS, WALKING-LEAF, ETC.

bind legs and tail, the fore legs being used only when it is feeding. The books state that the tail is an offensive weapon, and an organ of locomotion, and also that the Kangaroo is a harmless and inoffensive creature. An old Kangaroo hunter of our acquaintance tells a different story, and as he has observed them by the hundreds, he doubtless knows. The animal progresses by leaps, and when pursued, takes fifteen or twenty feet at a bound. Our friend

says that the tail is not used in making the leap, but to break the fall as the animal strikes the ground. As to their being harmless and inoffensive, he says that an "old man" Kangaroo is a formidable animal, and that not only the dogs used in hunting often get killed, but men have sustained severe injury from them. He says that the tail is not used as a weapon at all. The Kangaroo will clasp a dog or a man by its fore legs with a powerful grip, and then by the use of its hind legs, upon each of which there

is a long and remarkably developed sharp toe, scratch and tear its victim. The largest specimens stand at the height of an ordinary man, and the hunters are careful how they come to close quarters. When taken young they are readily tamed and make interesting pets, but are very difficult to raise. The Kangaroo is an



THE GREAT KANGAROO.—(*Macropus major*)

Marsupial Animals.—The Kangaroo.

The Marsupial animals are those which have a pouch under the belly for carrying their young. The teats are within this pouch (or *marsupium*), and the animals, being born in a very rudimentary condition, are conveyed to the

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herbivorous animal and is considered a great nuisance in Australia. Sheep-raising is one of the important industries of that country, and the Kangaroos are troublesome, as they destroy large amounts of pasturage. The flesh of the animal is highly prized, and our informant thinks that there is nothing in the world in the way of a soup to equal that made from a Kangaroo's tail, and that a *fillet* or tenderloin of the animal is better than any other meat.—Since the foregoing was in type we have received from Mr. John Anderson, Allansford, Victoria, some specimens of Kangaroo skins, treated in different ways. One, dressed with the hair on, would, we think, make excellent robes. The friend above referred to says that the skin, tanned in this way, makes a very warm and light overcoat. Another specimen is grained, and of the natural color, very soft, and feels much like kid, while another and stouter piece has been blackened, and seems much like light calfskin. We are told that the chief objection to leather made from Kangaroo skin is, that it stretches to an inconvenient extent.

Walks and Talks on the Farm—No. 69.

When I was a boy my father made me keep the accounts of his farm, and I soon began to take an interest in it. He had ten children, and worked hard to give us a good education. When crops were poor, or prices low, it was with a heavy heart he sat down at night to tell me what to write in the book, and though young, I soon learned to sympathize with him. Like all good men, he lived for his children. He worked hard for us, denied himself many luxuries that we might have a good time, would wear an old hat that we might have new shoes, and often walked that we might ride. Never was a happier set of frolicking young ones on a farm. And there is not one of us to this day that does not love farming. But those who talk of the "independent life" of a farmer, of his freedom from care and anxiety, merely show their ignorance.

There was plenty of anxiety on our farm. There was anxiety about the weather, about the crops, about the stock, and, above all, about the health and life and limbs of the children. We ought all to have been killed half a dozen times over. One was kicked by a horse and ran a narrower chance of life than he has ever done since, and yet he has been through the war, has been up and down the Mississippi on a steamboat, and traveled the whole length of the Erie Railroad. "Aunt Hattie," as we now call her, had her head cut open with a donkey cart, and a sad house we had for many days as she lay between life and death. Another sister when three years old, caught hold of the spokes of the fore wheel of a heavily loaded wagon, and was thrown forward, and the wheel grazed her whole body. My father was driving, heard the scream, and looked round in time to see the danger, but not in time to stop the team. Fortunately the nurse held on to the child and jerked her out of the rut before the hind wheel reached her. Last fall, the eight children who are still living all met together, and it was found that every one of us had some scar that remained to remind us of the accidents of early life.

But what I wanted to say was that the habit of keeping the books for my father was not only a benefit to me, but a great comfort to him. He told me his fears, and I know now that it must have been a great relief to him. It certainly was a great advantage to me. If I know any-

thing about farming, I learned most of it from my father. And I am fully persuaded that if a farmer would provide a nice, substantially bound book, and induce his son to write down every day at his dictation all that was done on the farm, it would go a great ways towards making a good farmer of him. It would be useful. I can imagine some such record as this:

September 1st.—"Very dry weather. Cultivating for wheat." And then the boy would be very likely to ask when he was going to sow, and what kind and why.

Sept. 2.—"Sow had ten little pigs last night, but killed two of them." "It is too bad," says the boy, "to lose them now, pigs are so scarce and high, and they say a rail nine inches high put round the pen, six inches or so from the boards, will prevent a sow from lying on the pigs." "I thought of doing it," says the farmer, "but I could not find the hammer, and we have no spikes." Mental reflection by the boy: "I left the hammer in the wagon." By the father: "Those two pigs at six weeks old would have sold for ten dollars."

Sept. 3.—"Thrashing. The five acres of Diehl wheat on the summer-fallow gave 150 bushels; the 10 acres of Mediterranean after oats gave only 120 bushels." "If we had sown it all to Diehl," says the boy, "we should have had 450 bushels instead of 270." If the father is a sensible man he would correct this remark, and point out the fact that it was not the variety, but the condition and character of the land that made the difference.

Sept. 4.—"One of the horses sick." He had been on the thrashing machine all day, and the driver, to save his own horses, had made the farmer's do pretty much all the work. This horse was on the outside, and his end of the evener was no longer than that of the horse having the inside tract, and he had to draw just as hard as the other and walk much faster.

Sept. 5.—"Drew the wheat to the city. Left at home 10 bushels of Diehl for seed, and 20 bushels of Mediterranean. The Diehl overrun 4 bushels, and the Mediterranean fell short 3 bushels. Got \$2 a bushel for the Diehl, and \$1.75 for the Mediterranean." The five acres of Diehl came to \$280, and the ten acres of Mediterranean, \$175.

Now let a farmer tell his son such facts, and let him write them down as they occur, and the chances are that five years will not pass before the farm will be at least partially drained, weeds will have disappeared, thirty bushels of wheat and two tons of hay per acre will be the rule rather than the exception, and there will be little danger of that young man seeking a clerkship in the city.

One of the editors of the *Agriculturist* asks me to tell them more about the new implements and machines I use on the farm, so that they can compare notes. By and by I will do so. It is never safe to recommend a new thing without giving it repeated trials. For instance, the arrangement for fastening scythes to the snaths by means of a screw is far superior to the old iron band and wedges. But if the manufacturer had been here the other morning it would have been a relief to have given him "a piece of my mind." We have about a dozen old snaths on the farm, more or less, but have always considerable trouble in "hanging the scythes," and getting started for an hour or two's work in the morning, while the dew is on; so to make sure of no delay I bought three new snaths and scythes with this ingenious contrivance for fastening on the scythe. We did

not use them three times before two of them were brokeu, and the scythes would not fit any other snath. The whole trouble lies in the fact that the band is made of cast-iron, and when the screw is turned a little too tight, it snaps off like a pipe stem. If the hardware stores kept these cast-iron bands and screws on hand so that we could get two or three with each snath, if would not be so bad; but now when this little bit of casting breaks the whole thing is useless, and we must stop work and send six or eight miles to the store for a new snath.

I tried one new thing this spring that pleases me in every way, and that is Cahoon's Broadcast Seed Sower. I drilled in all my grain, but we sowed the clover and grass seeds with it on the wheat, and I think the seed was distributed more evenly and with less labor than it can be done by hand, and in less than half the time.

Another new thing I have tried this spring and summer, which gives unbounded satisfaction, is one of the Collins' Cast Cast-steel Plows. Of course these things are not new. I am told that there are a hundred thousand of the Collins' plows in use, principally, I suppose, at the West. They are, however, as well adapted to our soils as to the prairies.

I would never get a new thing unless it was a decided improvement over the old ones to which the men have become accustomed. And another point is worthy of mention. When you use more than one machine it is desirable to have them all of one kind. A farmer with one hundred acres of hay to cut, especially if he has much grain to cut also, should have two mowing machines. And he should have them both alike. If both should break the same day it is not probable that the same pieces would break in each, and he could fix up one machine from the two, and keep it running until the broken pieces could be obtained. I foresaw we were going to have haying, hoeing, and harvesting all together this year, and sent for a new Wood's mower and kept both of them going. Bad as the weather was, I never had such an easy time with haying. Most of my neighbors were behind, and they were glad to send men to help me to bind and draw in grain if I would send a machine to cut hay. Blessed be the inventors and manufacturers of mowing machines! say I. I know of no machine so near absolute perfection as a good mower. "You had to mow the hay on this side-hill by hand," I said to Mr. Frank Cornell, as we were walking over the University farm at Ithaca. "Oh, no!" he replied, "I cut it with my Buckeye mower." "It does not seem possible," I said, "that any machine could work on such a hill, sloping in all directions, and about as steep as the pyramids of Egypt." "I had no trouble at all," he replied, "only where it was very steep I jumped off and held the machine so that it should not tumble over!"

I have a horse that, while not absolutely sick, is decidedly "below par." He has incipient indications of spring halt; acts a little as though he was foundered; his hoofs are soft and peel off on scraping them, and look very much as though they were affected by a species of dry rot. I do not think he is broken winded, but he coughs worse than any horse I ever heard. He has a swelling on the windpipe close under the jaw, known as bronchocele. It has just occurred to me that perhaps he has got a stick in his throat, and has had for months.

I got the idea from John Johnston. He says that several years ago a friend of his had a

horse that was sick, and after doctoring him a long time without any improvement, the veterinary surgeon told the owner he had better take him to Mr. Johnston. He did so, and Mr. J. gave him a ball, but the horse could not swallow it, and he put his hand into his mouth to see what was the matter, and found a short piece of stick in his throat, which he pulled out, and the horse soon got well. Since then he has known of five similar cases in his own experience. Once he drove a favorite mare from his farm near Geneva to the State Fair at Auburn, and noticed that she did not seem very well. When he started to come home, three days afterwards, the mare looked very gannt, and was not as lively as usual. Coming to a watering trough on the side of the road, he drove up to it, and the mare tried to drink, but seemed to swallow with difficulty, and let some of the water run out of her mouth. "That's the matter, is it?" said Mr. J. to himself, and immediately jumped out of the buggy, took off his coat, rolled up the sleeve of his right arm, took hold of the mare's tongue with his left hand and held it firm between her jaws, put his right hand down her throat, and *took out the stick.*

Some time afterwards a farmer asked him to go to his house and look at a horse that was sick. Mr. J. asked him what was the matter. "Does he eat well?" "He seems to want to eat," he replied, "as much as ever, but when he takes his oats into his mouth he lets them fall out again." "Well," said Mr. J., "I am not very well or I would go with you, but do you go home and take hold of the horse's tongue with your left hand, and thrust your right hand down his mouth, and just at the beginning of the throat you will find a stick." The man stared at him as though he thought he was crazy. But he went home, did as Mr. J. told him, and, sure enough, there was the stick!

The Deacon says he has cured several horses that had the heaves by getting the tender leaves or buds of Mullein and boiling them in water, and then moistening the cut feed with this Mullein tea. He does not know that it will absolutely cure a broken-winded horse, but at any rate it will greatly relieve him.

Farmers here have had to pay higher wages for harvesting than at any time during the war. And I am not sorry for it! It should teach us a lesson we seem slow to learn. We must put up houses for married men and give them steadier employment. Those of us who cannot afford to build houses can at any rate sell an acre or two of land to some good man who is willing to erect a house for himself, and who will work on the farm. While the nurserymen in the city got more men than they needed, at \$1.25 and \$1.50 per day, without board, farmers were paying \$2.00, \$2.50, and \$3.00 a day and board, and the men who worked for us thought and acted as though they were conferring a great favor. One man, who rents a house near me, got \$4.00 a day and board, and yet I have no doubt that he does not do as well as a man who has steady work at \$1.00 a day in winter, and \$1.25 or \$1.50 in summer, without board. A married man who has worked for me three or four years for \$1.25 and \$1.50 a day, without board, thought I did not pay enough, and this spring went to Michigan. He wrote back that he was getting \$2.00 a day. Shortly afterwards his wife wrote: "All George has got this month is \$7.50." Both statements were doubtless true. The whole system argues little for the intelligence of either the men or the farmers. Both

alike suffer. But I think the farmers are the most to blame, because they discourage married men from settling in the neighborhood by manifesting an unwillingness to sell a small plot of land, and also from not giving steady work. This very man, I am told, says he would not have left if he could have found any farmer willing to sell him five acres of land. I am well aware that a farmer does not like to sell a square piece of land out of his farm near the road. I would not do it myself. But the plan I propose is to sell a strip of 20 acres to four or five men, and let them open a road in front of the houses. There is no difficulty in finding the men willing to buy. The Germans all want land of their own, and they make capital farm laborers. Let the farmers be accommodating. Plow the land for the men in the spring, and cultivate their corn and potatoes with the understanding that they shall "work it out." The women and children will do nearly all the work on their little places, and the men will be glad to work for the neighboring farmers. In this way we can get men at as cheap rates in the country as the farmers and nurserymen do near the cities. You need not be afraid to let a good German have the land without any payment down. When he once gets a house erected, no matter if it does not cost \$50, you may be very sure that the land will never come back to you. If he lives he will pay for the land. If he sells, it will be to buy a larger farm, and in this case the house and land will pass into the hands of some other man who will want to work for you.

The late sown wheat this year, so far as I have seen, seems to have done the best. It did not look nearly so well this spring as that sown earlier. I did not finish sowing until the first of October, and the Deacon told me in May that my wheat was dying. Some fields in the neighborhood, sown in August and the first of September, were looking splendidly, but before harvest my crop caught up. The crops that were put in early, especially where sown thick, were badly laid, and did not turn out well when thrashed, and, besides, it was a slow and expensive job to cut them. If the land is in good condition, I would not sow wheat before the 15th of September, and would not drill in more than two bushels per acre. Where wheat is sown after a spring crop, and is in good mechanical condition, it will pay well in this section to sow 200 lbs. of Peruvian guano per acre on the winter wheat at the time of putting in the crop. I would break all the lumps of the guano, and then sow it broadcast, and harrow or cultivate it in before drilling in the seed. I said it would "pay well." But of course this depends a good deal on the price we get for the wheat. At any rate, if the wheat crop pays at all, we shall lose nothing by using guano. And if we are willing to risk all that it costs us to prepare the land, the seed, interest, and the labor of cutting, binding and thrashing, I think we can afford to risk ten dollars an acre in applying manure.

But if the land needs draining, or has not been properly cultivated, either directly for the wheat or for previous crops, and is consequently not in good condition, it is throwing money away to apply guano. And here is the weak spot in our agriculture. Not one farmer in ten really gets his land into the proper mechanical state for the reception of the seed. We often spend labor enough on it, but do not take time enough. Two or three plowings, during two or three weeks, just previous to sowing, when

the weather is very hot, may destroy quack roots or thistles, but it does very little towards developing plant-food in the soil. It is a capital plan to start the seeds of red-root after the wheat is sown, and when we can no longer get at the plants.

When will Top-dressing Pay?

We think always, when we have any fertilizer to spread upon the mowing. Of course we must not rob the plowed fields, but every thrifty farmer can afford to do something for his meadows every year. Material for top-dressing is by no means confined to barn-yard manure. The wash of roads is very good, and this can sometimes be gathered in large quantities in the hollows. The subsoil of clay lands produces very marked effects upon gravelly meadows. Peat, taken from near the surface and weathered one winter, will sometimes double the grass crop. Ashes, the waste of factories, lime, gas-lime, sea-mud, rock-weed, kelp, sea-mosses, and eel-grass, all pay well for top-dressing. On almost all farms near cities it pays well to sell hay, and there is no objection to keeping land in meadow and selling the crop as long as one will keep it up to a production of three tons to the acre by using fertilizers. These farms are favorably situated for purchasing fertilizers. They can generally get stable manure and night-soil on very favorable terms, and have but a short distance to carry it. With top-dressing, we have no doubt that meadows may be kept indefinitely in grass. Without it, most lands will run out in a few years, and must be plowed to make them profitable. As to the best time for applying manure, there is probably much less choice than most farmers think. Well-rotted compost can be safely put on at any time. Fresh stable manure and coarse barn-yard manure we prefer to apply in the fall. It will tell more upon the grass of next season than if spread the following spring. There is probably some loss of ammonia if green manure is applied in the summer, but we do not hesitate to apply all other manures to grass at any time when it is most convenient to cart them.

How to Keep Pastures in Good Condition.

It is with a pasture as with a man, the income must be greater than the expenses, or it grows poor. Crops are the expenses. It is quite possible to make the surface of any soil unproductive and unprofitable, by carrying off more than is put on. Pasturing with cows that are yarded at night does this. Sheep or beeves that remain upon the land, on the contrary, return more than an equivalent in manure, and keep the land improving. Where plaster meets a want of the soil it may be kept improving by sowing broadcast a bushel and a half to the acre every spring, and feeding off the grass. Many farms in the grazing districts in the interior are kept up mainly by plaster and feeding. Some of them will carry a bullock to the acre. Other lands need lime, and the lime brings in clover, and this plant, by the large drafts it makes upon the subsoil and the atmosphere, always improves the pasture. In other districts ashes are accessible at reasonable rates, and they are always a reliable top-dressing. The effects are visible on some soils in increased crops of grass, for twenty years. Cheap ashes will keep up any pasture, pay their cost, and leave a profit. So will home-made compost, if

a man will but make and use it. Along the sea-board the old pastures need nothing better than creek-mud, and the weeds thrown up on the shore. Too often these are allowed to rot on the sand for want of labor to gather them. Irrigation is available in other cases, and where the waters of a brook can be turned over a pasture nothing more will be needed to keep it in good condition. Changing soils oftentimes has a wonderful influence. Sometimes on the same field of twenty acres there will be sandy or gravelly knolls nearly bare of vegetation, and hard clay or muck in swales. A top-dressing of the sand would pay on the swales, and nothing could be better for the knolls than the muck or clay. Our old pastures to be kept profitable must have something done for them. It will not pay to devote ten acres to a single cow.

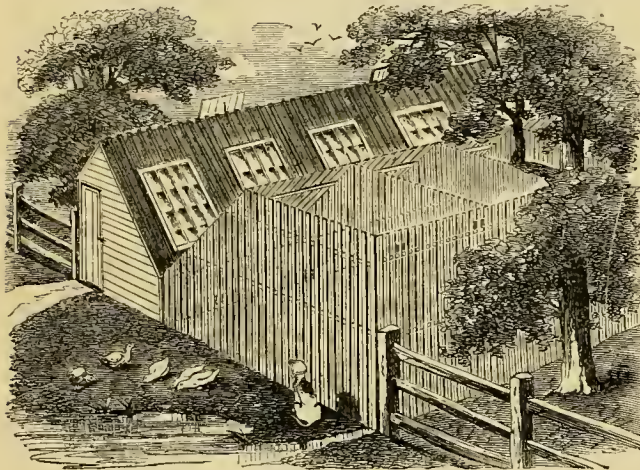


Fig. 1.—FOWL-HOUSE OF JOHN SALISBURY, JR.

Cheap, Convenient Fowl-houses.

We have repeatedly in former numbers given descriptions of fowl-houses, both for keeping a single breed, or for common fowls, and for keeping several breeds distinct. The principle of

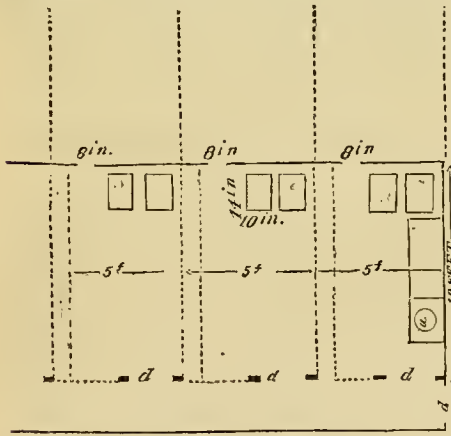


Fig. 2.—GROUND PLAN OF HOUSE.

building poultry-houses as cheap as possible is hardly a correct one to follow, but necessity knows no law with us, as with many of our readers, no doubt, and sometimes we are very glad to combine cheapness with convenience and a moderate degree of excellence. In visiting lately the poultry yards of Mr. John Salisbury, Jr., of Nyack, we were struck with the compactness and convenience of a new house he has lately put up for small stocks of fancy fowls, and have had engravings made to show it.

The length of the building is 45 feet, and its width, 10 feet. It is divided into nine apartments, each 5 feet wide. The house is entered at one

end, as shown in figure 1, and a passage-way 2 feet wide extends through it on the north side (see figure 2).

The interior partitions, including the long one, are of 1 1/2 x 1-inch pine strips; the outside entirely of one-inch hemlock boards batted.

The roof is pine flooring, tongued and grooved, and for each apartment a 3 1/2 x 6 feet hot-bed sash is set in the roof. The posts which support the ridge of the roof are 8 feet long, the front wall or side being only 2 1/2 feet to the plate. The yards are much longer than it was

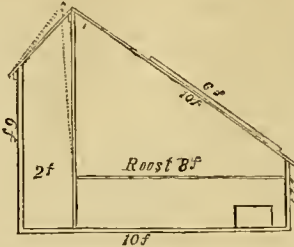


Fig. 3.—SECTION OF HOUSE.

possible to show in such a small picture as fig. 1, and 5 or 10 feet wide. The paling surrounding them is also of 1 1/2 x 1-inch strips. A brook runs through the yards, affording an abundance of fresh water, which is a great source of health, and of success in raising fowls. The floor of the house is a dry gravel bed, covered with sand. The roosts are low, as represented in fig. 3. They are made of round sticks, about two inches in diameter, and, beneath them, troughs of two boards nailed together catch all the droppings. The nests and feeding boxes stand upon the sand, and are frequently moved to

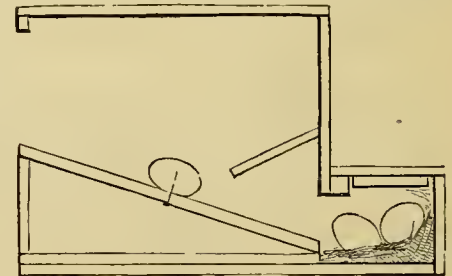
prevent feed getting under them, or the ground becoming moist, and affording a harbor for insects. Ventilation is secured by openings in the short pitch of the roof. No rafters are needed, as the roof is sufficiently stiffened by the cross-partitions. The doors by which the different apartments are entered are two feet wide, made also of strips, and all are furnished with locks; so that when the owner is absent, the feed boxes (and water vessels, if the fowls are shut out of the yards) may be filled from the passage-way, and no one can interfere with either the fowls or their eggs. A lock on the outer door makes all secure at night. The stock, which had been for several months closely confined, appeared healthy, and continued laying. The slant of the paling forming that part of the yard fence against the house is given to it in order that it shall not cut off the sunlight from the windows. As the house is arranged for nine varieties, where fewer are kept two or more apartments may be thrown together, and thus larger flocks accommodated. We could not have wished for better quarters than this cheap house affords for our old favorites, the Houdans, La Fleche, and other breeds, the original stock, imported last year for our premiums.

PLOWING WITH A SINGLE LINE.—We have received scores of letters on this subject, which it is of course impossible for us to publish. Here is one, sent from Washington Territory, which has the merit of being short. The writer says: "As Walks and Talks has given me some good hints, I will tell him how to train a horse to go with a single line without losing an hour's time. Supposing he is plowing out corn or potatoes, and drives his horse with two lines. Let him tie a knot in the lines, so that the left

line is about three inches shorter than the other and then, when he wants his horse to go to the left, give a steady pull and he will 'come.' When he wants him to go to the right, a few quick jerks, with the word *gee*, will do it. If it does not, at first, he has the two lines to work with. But always give the steady pull for *hau*, and the light jerk for *gee*, before touching the right line, and I will warrant that after three days teaching he can take off the double line and put on the single one, and can drive him wherever he wants him to go."

A Check to Egg-eating Hens.

Could hens find their own nests, and occupy them unmolested, it would be a rare occurrence to find eggs broken in the nests, or hens that would eat their eggs. Hens are often so closely confined that several use one nest. They quarrel over possession, break eggs occasionally, and in arranging the eggs beneath them, they taste the delicious morsel. Thus a habit is frequently formed, and all broken eggs are at once eaten. Hens learn frequently to break eggs, and to consume every one as soon as it is laid. Even when there is no quarreling, eggs are sometimes broken by clumsy hens, and by the porcelain or glass nest-eggs so commonly used. An egg shell is proverbially a frail vessel, and though glass eggs are very pretty to look at, and by a very stupid pullet might be mistaken for real eggs, yet they are so heavy and so hard that the only wonder is that any eggs survive being rattled about in the nest with them. Nevertheless eggs will sustain heavy pressure evenly applied, and quite hard blows from moderately soft substances, as for instance from wood, or from other eggs even, for there is a considerable amount of yielding elasticity in the surface of an egg. From whatever cause it occurs, eggs are apt to be broken and eaten. We noticed in use at Mr. Salisbury's, a contrivance of Mr. Cornelius Smith's, for the immediate removal of the egg as soon as laid. A section is shown in the accompanying figure. It is a



common nest box with a bottom slanting gently from front and rear towards the center. The board forming the slope from the front passing quite through to the rear of the box, while that sloping from the rear stops short of the middle far enough to allow an egg to roll under it down the other slanting board. At the back of the nest-box, outside is a receptacle for the eggs, lined with hay, and closed with a tight-fitting cover. We tried the experiment to see if eggs would roll down and break if they struck the back of the receptacle, or if they hit other eggs, and they did not, even when started quite fast. A nest-egg is made fast to the slanting bottom of the nest; and for this purpose the turned wooden nest-eggs they bring nowadays are excellent, for they may be screwed on from below, as shown. We were rather surprised to find that no imitation of a nest was required, the hens laying upon the bare boards, so far as

one could judge, with perfect contentment. It would certainly look much better if a roll of hay were tacked against the sides all around.

Plowing with Three Horses Abreast.

One reason why there is so much difficulty about the more extensive employment of three horses abreast in plowing is, that very few farmers know how simple a matter it is to get up a set of whiffle-trees for the purpose. The only addition to the ordinary outfit of a farm is the evener. This is provided with three com-



Fig. 1.—CLEVIS ATTACHMENT.

mon iron clevises, and a short piece of chain. It has a common "double-tree" at one end, and a "single-tree" at the other, attached to the piece of chain. The big clevis is placed exactly one-third of the way between the "double-tree" and "single-tree." This is all there is to a three-horse whiffletree. It is an important thing to arrange the plow clevis so as to throw the draft far enough to the land side of the team to enable one horse to walk easily in the furrow and two on the unplowed ground. If the pull is *direct*, the horse that walks in the furrow will crowd the middle one, and make the team unsteady.

Very good plow clevises for this purpose are manufactured for sale, but with a light ox chain, and a single piece of stout iron work, an equally good one may be got up at home. The iron should be about six inches long from the center of the hooks to the shoulder on the straight end. Its form is shown in fig. 1. The hooks should be placed in the upper and lower eyes of the clevis, so as to hold the iron firmly in a horizontal position, with the other end projecting toward the land side. The chain

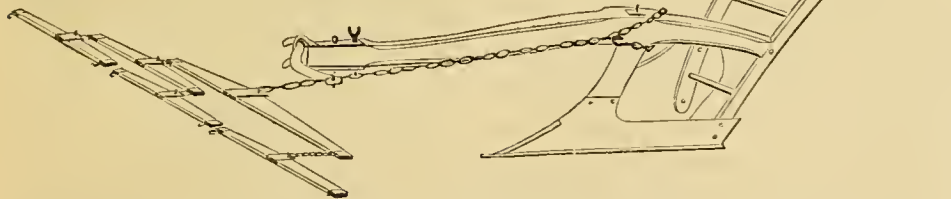


Fig. 2.—PLOW RIGGED FOR THREE HORSES.

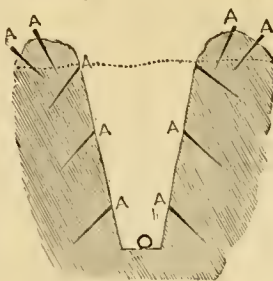
should be fastened around the beam back of the standard of the mould-board, so as to lie along the land side of the beam, and the flat end of the iron should be passed through one of its links and secured by an iron key or a hard wood wedge, driven through the hole. The whiffle-tree evener should then be fastened to the chain as close to the plow as possible. The complete gear is shown in fig. 2.

Filling Tile Drains.

A Western correspondent sends suggestions about covering tiles and filling drains. He objects to throwing down earth from the bank, as it would displace the tiles, and suggests the scraping off of enough of the subsoil from the side of the ditch near their level, which will fall gently upon them, and will be compacted by the operator as he walks forward in his work.

Where one man is working alone, this is a good plan, but if the tile layer can have an assistant, walking toward him in the ditch to lay

gently on each collar, as it is laid (and while the tile is held in its position by the hand), a shovelful of fine clay, the work will be better done. The plan (of which the following illustration is forwarded us) for filling the ditches, while it would need some modification in a hard, gravelly subsoil that can only be worked with a pick, is well worth a trial in the more yielding soils. It is to cut down the sides of the ditch, step by step, as in covering the tiles, until it is nearly full. "Then getting out of the ditch I thrust in the spade as in digging, about fourteen inches from the edge of the bank, and pry in the dirt. This leaves very little to be shoveled in by the old spine-twisting, back-aching method, and is a decided improvement, both as to labor and time." In the sketch sent by our correspondent, the surface level is shown by the dotted line; above this is the earth thrown out; and A A A the thrusts of the spade, by which the earth is pryed in to fill the ditch, beginning at the bottom.



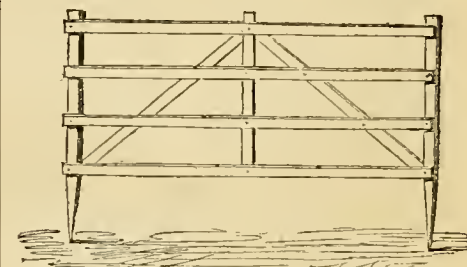
FILLING A DRAIN.

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Hurdling Sheep on Green Crops.

We were at Mr. Wing's farm of "Maple Shade," Dutchess Co., about the middle of July, when he was just turning his Cotswolds upon the rape, then making a fine show. Rape, which is a cabbage-like plant, making an abundance of foliage, but no head, is sown as early as the ground can be worked in the spring, and a suc-

cession of crops, put in a week apart, is provided. It is sown in rows about two feet apart and cultivated like turnips, but not thinned so severely. If it makes a good growth, it is fit to be fed off about the middle of July, and Mr. W. finds it the best green fodder he can give his sheep. Soon after the ewes are separated from the lambs, when dry enough, the flock is hurdled upon the rape. One of the hurdles used is represented in the accompanying illustration. It is 8 feet long; the posts, 4 1/2 feet long, of 2 x 3-inch pine; the slats, 1 x 2-inch pine, are let into the posts; and the panel is braced by one upright and two converging braces of 1 x 2-inch stuff. The slats are nailed to the posts and to the braces at each lap by one stout wrought nail clinched. When set up in plowed ground, a crowbar is used, which is represented in a Basket item. It is about 3 1/2 feet long, and has an enlargement about a foot from the point, which gives additional weight to the bar, making it a convenient maul, and being cup-shaped upon one face, has no tendency to split the posts when they are driven into the ground. In set-



HURDLE FOR SHEEP.

ting a panel, two holes are made, which receive the pointed posts part way; they are then driven down, and a ring of wire slipped over adjoining posts. Thus a very firm fence is easily made, handled, and shifted. Both ewes and lambs are fed upon the rape, the flocks being turned into the hurdles towards evening, and taken out and put into pastures where they can lie in the shade during the day. The hurdles are shifted daily, the sheep having access to only so much as they can eat clean. When the rape is rank, they refuse the coarse stalks, which, in a younger state, they eat clean. After one or two days' feeding there is no difficulty in driving them, for as soon as they are let into the field they will break for the hurdles, neg-

Exhibition Coops for Poultry.

Who has not been distressed by the forlorn coops or cages which generally contain fowls and other poultry at exhibitions? The difficulty of hitting upon just the right style, for convenience, cleanliness, ease of packing for shipment, ease of cleaning out, safety of the fowls and of their eggs, has led us to discuss the subject somewhat, and try to induce our friends to contribute their good ideas. We have come to the conclusion that those people who are thinking about it have made up their minds to get their ideas patented. We propose therefore the plan here described, as far better than anything we have yet seen, and shall be glad to present any superior one (not patented) to our readers.

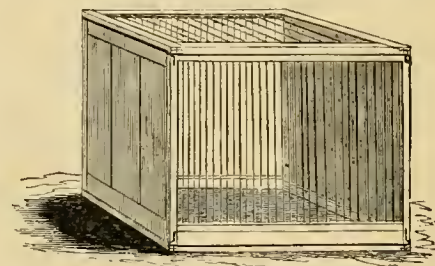


Fig. 1.—EXHIBITION COOP FOR FOWLS.

The coop or cage, fig. 1, is made of six external pieces, and a drawer. The front, top, and back, are frames made of three-quarter-inch pine, halved, and screwed together with two small screws in each corner. Unannealed iron,

No. 6 wires, go across these frames the shortest way, and are placed about an inch and a quarter apart. The bottom is of light, clean pine stuff, five-eighths of an inch thick, tongued and grooved, and having four-inch cleats let in flush, to prevent warping. The sides are made in the same way, or may be paneled. The drawer is an inch deep, inside measure, and a space is left in the front or in both the front and the back, to put it in and pull it out. These pieces are put together by pins and hooks, and if well made the cage will be a strong one. The drawer should be kept filled with dry sand

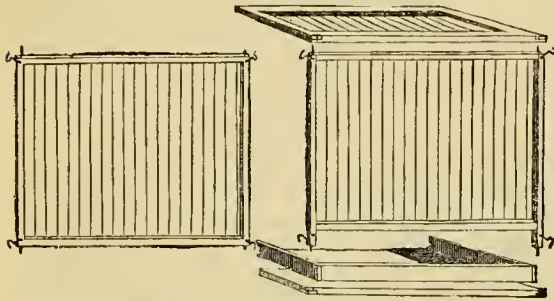


Fig. 2.—FRONT, REAR, TOP, AND BOTTOM.

or gravel, covered with a little short, clean straw. In case it is undesirable to have the top open, the top and bottom, as shown in the engraving, may be reversed, and each one used in place of the other. The fowls may be put in by lifting the top, or by lifting the top, shoving it back an inch, and then raising some of the wires in the front. Should the fowls be exposed to drafts, the cage may be covered with canvas or baize on one or more of the open sides. Packed for transportation these cages would occupy only 6 inches in thickness. The dimensions of the cage may vary considerably; the size represented in the illustrations is 2 feet high, 2 feet deep, and 2½ feet long.

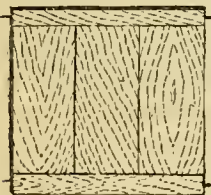


Fig. 3.—SIDES OF COOP.

A low roost, 5 inches high, to relieve the fowls from constantly standing upon a flat bottom, may be made of a half round piece of wood, two inches in diameter, (one inch radius) having two triangular blocks with 5-inch bases for feet. When not in use, if simply turned over against the back of the coop, the roost will be entirely out of the way.



Fig. 4.—ROOST.

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Impure Drinking-water.

It is said that a man's palate is like a policeman, stationed at the door of his stomach to prevent the entrance of improper company. To a certain extent this is true, but our safety requires that the aid of the reason be called in to exercise a wiser discrimination than our tasting faculty can do. Many articles, more or less injurious, are either of agreeable taste, or are tasteless. For instance, it is not unlikely that cholera, typhoid fever, and epidemic diarrhoea, are propagated by means of fresh and sweet-tasting drinking-water, more than in any other way. It is not positively proven, but it is undoubtedly true, that the presence in the water of wells and springs of matter emanating from the excrement of persons sick with the above diseases, and

perhaps some others, is a sure means of disseminating them. It is also generally believed among those who have paid the most attention to the subject, that any excrementitious matter in drinking water is not only highly injurious, but is often a cause of the outbreak of diseases. There is good reason to suppose that these diseases are also communicated by a contamination of the atmosphere (especially of sleeping-rooms), but the weight of authority seems to attach even greater importance to pure drinking-water than to pure air. As an instance in point, we refer to the fact that in the summer of 1854

a sudden and most violent outbreak of cholera (reaching a mortality of 131 in a single day, within a circle of about 200 yards radius), which occurred in London, was distinctly traced to a well in the center of the fatal area, that received the leakage of a house-drain through which the evacuations of a cholera patient passed immediately before the outbreak of the pestilence. The water of this well (as is often the case with water containing organic impurities) was peculiarly fresh and palatable. On the removal of the handle of

the pump by order of the vestry of the parish, the disease rapidly diminished. It seems perfectly clear, in this instance, that the cholera poison contained in the evacuations of a single invalid was distributed by means of this well throughout the whole district, dealing death on every hand.

It is stated that, a few years since, the overflowing of the filth-vat of the Atlantic House, at Newport, R. I.,—sending a poisoned stream through the gravel stratum that connects the wells of a large part of the town—gave rise to what was known as the John Street Fever, which proved of the most fatal character.

Sufficient evidence has also shown that the leachings of barn-yards are, as a cause of typhoid fever infection, hardly less dangerous than are the exudations of privy vaults.

Now is the season when we should guard with the utmost care against every possible contamination of our wells and springs. During the winter, spring, and early summer, the amount of water in the soil is sufficient to keep any slight impurity so far diluted as to be comparatively unimportant, but during this and the succeeding months, when the springs are low, when most of the water-bearing strata of the soil have run dry, the virus is so concentrated as to tell, with often fatal effect, on all who use the water. This season of low wells is peculiarly the season of typhoid fever, epidemic dysentery, etc., and it stands every sensible man in hand to provide *at once* for the purification of the source from which the drinking-water of his family is taken. A single cup of clear water, fresh from the spring, may carry the seeds of a fatal disease, and typhoid or dysentery may come, like a thief in the night, and carry away the pride of the house:—then there will be lamentations over the inscrutable decrees of Providence.

If no well or spring is at hand which is surely free from contamination,—which has no streak of gravel connecting it with a privy-vault, a cess-pool, or a barn-yard,—then, by all means, commence by providing a good supply of *rain* water, and end by so arranging the establishment that no atom of the waste of the house or barn shall find its way into the lower soil.

PLOWING UNDER CROPS FOR MANURE.—An old farmer in Missouri writes us that he has "tried buckwheat, oats, corn, and clover, plowed

under as manure," and has come to the conclusion that nothing is so good as clover. He has not tried peas, and asks whether they are good for this purpose. Next to clover there is no crop better than peas to plow under for manure. But peas contain a good quantity of matter that can be turned into pork, and the manure that is left will be nearly as valuable as the peas themselves. Grow all the peas you can, but do not plow them under. There is no better feed for pigs, and sheep do well on them.

How to Save Corn Fodder.

Much of the value of corn stover is destroyed by careless handling, even in the districts where they store it for feed. This is especially true of the corn that is cut up by the ground, and put in shocks to cure. The curing process goes on safely while it remains in the shock, but the husking begins while the stalks are yet green at the bottom, and the fodder is immediately stacked or carried to the barn, and stored in bulk. It soon heats and moulds. If, after husking, the stalks are bound immediately in bundles, of convenient size for handling, and put into large shocks of thirty or forty bundles, set up endwise, and capped with straw, they will cure without moulding, and make excellent fodder. Or the bundles may be taken directly to the barn, or to an open shed, and stored in the same way. The air has free circulation through the interstices of the bundles, and the moisture is carried off. Well-cured corn fodder is nearly equal in value to hay, and the extra labor of making into bundles will pay.

Draining Large Swamps.

Those of our readers whose farms run on to large swamps, which can be drained only by the concurrent action of all their proprietors, will be interested to know what is being done on a similar swamp near New York. The swamp is a long and narrow one, and winding through it in the most tortuous course is a brook of considerable size, which, owing to its many curves, to the obstruction of trees that have fallen into it, and to a profuse growth of water-cresses, is always so sluggish that at ordinary stages of the water it runs bank-full; and after heavy rains, the whole swamp is overflowed and is kept constantly in such a condition as to be worthless even for pasture. The plan for its improvement consists chiefly in a project for straightening and deepening the course of the brook. It is estimated that by striking a bee-line from the lower to the upper end of the swamp, the length of the stream will be reduced more than one-half; and it is in contemplation to make the excavation to a depth of four feet below the level of the banks, at which depth, almost throughout the whole course, the bottom of the brook will be, not in muck, but in the hard subsoil. In order to prevent the washing away of the banks, the bottom of the brook will be but three feet wide, the width at the surface being fourteen feet. This will give a very gradual slope, to be sodded immediately, and on which grass will grow down to the ordinary level of the water.

At the upper end of the cutting a pond of considerable size is to be made, with a sluice-way through the bottom of its dam communicating directly with the head of the brook. Ordinarily, this pond will be full, and its overflow will pass through a curved wooden "shute" by a very easy descent to the level of the bottom of the new ditch; so that there will

be no danger of the cutting away of either the bottom or the sides by the force of the water. The silt and *detritus* washed during autumn and spring freshets from the mountain regions above, will be largely deposited in the pond, and during the driest seasons of the year the gate in the sluice-way will be opened, drawing the water from the pond, and allowing the deposit to be removed. This removal will restore the capacity of the pond to the original point, and will yield a valuable fertilizer.

As the work is to be undertaken by the joint action of the riparian owners, the articles of association require that no open ditch shall be cut through the banks for the draining of the adjoining lands; but all side drains, whether they be open or covered, will be taken into the brook through covered passages, curving towards the outlet of the ditch or down stream and delivering on a level with its bottom, so that instead of cutting away the sides or leaving rough edges against which the stream in the ditch itself could take effect, they will add to the velocity of the stream while they add to its volume, and will obviate the most serious objection to such improvements as ordinarily made.

The Supply of Water to Farm Buildings.

Those farmers who live among the springy hill-sides of New England have, within their easy reach, the means for bringing water (through hollow logs, or otherwise) to their barn-yards or stables, in such quantities as to enable them to supply their animals at all seasons without undue exposure, to wash implements without trouble, and to easily do whatever else requires a liberal supply of pure water. While many farmers would hesitate to spend \$100 in bringing water to their barns, no farmer who has once done it would take five times that amount as compensation for giving it up. Unfortunately, a very large portion of the country is deprived of this natural source of water flowing by its own "head," and in such cases it is necessary to raise water by artificial means from wells or from springs on lower ground. Under these circumstances, recourse must be had to water-rams, water-wheels, caloric engines, or wind-mills. Of these, the most satisfactory, where there is a constant supply of water, flowing in sufficient quantity to allow nine-tenths of it to be wasted, is to be found in the use of the water-ram,—a simple and economical contrivance, which, with almost no cost for repairs, and without supervision, keeps up its steady work in winter and in summer, often for many years. The water-wheel is very effective, and is considerably used in the eastern part of Pennsylvania, where springs frequently break out near the borders of a brook. The water of the brook is used to turn an overshot wheel, having about twelve inches breast, and three-foot arms, or a diameter of six feet. This wheel works a little force-pump, the constant action of which sends an abundant supply of water, often to remote hill-tops. Where the supply can be drawn only from a well, although the caloric engine is favorably spoken of by those who know its operation, there is nothing so useful as a good, self-regulating wind-mill. One of these has been working on our own farm for more than a year; and, although subjected, without attention, to the severest gales, has never required the least repair, nor any attention whatever, beyond a slight oiling once a week. In selecting a wind-mill, it is best to take one having, in ordinary winds, rather more power than is required. We

thus secure the action of the pump during those slight breezes, which often are the only interruption to long-continued calms, during which, with a smaller wind-mill, we might be for weeks without the necessary supply; and nothing is more provoking than an intermittent supply of water after one has once learned to depend upon it. To go back to the old well-sweep and tub, after several months' relief from such labor, more than makes up for the small saving in buying the lower priced wind-mill.

A Warning to Young Book Farmers.

We took occasion, in a recent number, to say that certain works of the imagination, depicting the delightful independence and the solid prosperity of certain new beginners in farming and gardening pursuits, were not, in our opinion, good books. Since our former notice was written, we have read again, with much care, the "Farming by Inches" to which we then alluded; and we are so strongly impressed by it, that we should be doing less than our duty did we not again advise our younger readers not to be led astray by its apparent genuineness.

It is not impossible that everything stated in this book might actually transpire, but it is so far from being probable, that we risk nothing in saying that it is, in the main, untrue. A man and his wife, with no previous knowledge of farming, go into the country in the spring, take possession of an inherited place of only three acres, buy some books and plenty of manure, hire very little assistance, and, by dint of natural shrewdness and hard reading (mainly of a seedsman's advertising catalogue), make money enough to pay all their living expenses, all the cost of carrying on their business, and a good interest on their investment. On its face,—and probably in the intention of its author,—the story is a simple pastoral tale of the most unobjectionable tendency. If it were true, in all its particulars, it would be valuable, for the reason that what one man has done, another may fairly hope to do. If it were a very probable story, it would be valuable as an encouragement to beginners in farming.

It is neither true nor probable. Inhumanly speaking, it is not possible. Therefore, it is altogether bad, and, if read at all, it should be read with the understanding that the moral it attempts to point does not exist. It is a story of almost uninterrupted successes. A true record of the first year's experience of any tyro in agriculture would be, in almost every instance, a story of disappointment, failure, hard work, and sunken money. As in every other career, the school of experience is a dear and a hard school to learn in; and he who takes one acre or a hundred for his practising ground—if he has not learned his trade in advance—will, before his first year is over, need all his heroism to carry him through with a stout heart.

We believe that there is hardly a limit to the possibilities of farming and gardening. One who understands his business, who has sufficient capital for his operations, a good soil, a good situation, and plenty of manure at command, may hope for a very large reward for his labor and superintendence. We rejoice, therefore, when we see any man or woman turning from other pursuits with the intention of making agriculture or horticulture a career. Only when we see them go headforemost into the thing,—undertaking a difficult trade without learning it, and seeking to get in a month the

knowledge that a year cannot give,—do we shudder at the thought of the bitter things in store for them.

As a rule,—a rule that has few exceptions,—they will lose much more than a year's living expenses, and will learn much less than they could learn as working hands in the employ of a good farmer. If you, reader, want to become a farmer, or a florist, or a market gardener, take our advice:—Buy as many of the best books on the subject as you can find time to read, and hire out, as an irregular hand, with the best man you can find who is doing, practically, what you have made up your mind to do. Work for dear life, read, listen, and watch all that is going on; at the end of your year you will be able to start judiciously and well. You will have saved money, you will have saved time, and you will have gained information that five years of ignorant and expensive blundering could not have given you. There is no royal road to good farming,—except the road through royal hard thinking, and working, and waiting.

An Experiment with Weathered Peat.

The statement that our peats are, many of them, worth as much as good stable manure, is received with a good deal of incredulity. The chemist analyzes and shows his one, two, or three per cent of ammonia, but the old-school farmer shakes his head and does not take stock. He has tried the sour stuff and did not see any thing start. Dennis Tuttle, of Madison, Conn., on the other hand, has tried it and started something. During the peat excitement he had been drawn into the purchase of a bog for the manufacture of fuel. When coal went down from fourteen to seven dollars a ton, the conditions of success in that enterprise were somewhat changed. The peat bog looked like an elephant. But Mr. Tuttle happened to have bought with the swamp several acres of poor, gravelly soil around the margin. A small lot, so poor that it hardly yielded half a ton of hay to the acre, was taken for the experiment. The peat was gathered from near the surface of the bog in the year 1867, and was applied to the field at the rate of about twenty-five loads to the acre, in the spring of 1868. It had the advantage of the frosts of one winter, and was worked over so as to make it fine. The field yielded a large crop of good hay last summer, judged to be three tons to the acre. In a recent visit to this field it had a luxuriant growth of grass, certainly not less than two tons to the acre, and the good influence of the peat could be seen in the striking contrast between the body of the field and patches in the fence corners where the dressing had not reached. Mr. Tuttle was agreeably surprised at the result, and his neighbors who laughed at the elephant have a longing for the bank that has such deposits and makes such dividends. Allowing the peat to cost twenty-five dollars to the acre, spread upon the field, and the gain in the crop for the two years to be only four tons, worth \$75, he has made a good thing of it. The peat will last another year certainly, and when the sod is turned over for corn, there will be a heavy burden of grass roots to feed it. We could not expect any better results than this from the same amount of the best stable manure. It is not probable that every bog will yield such peat as this, but few have been fairly tested that do not pay abundantly for working. Why should they so generally be given up to toads and water snakes? CONNECTICUT.



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AMONG THE SALT MEADOWS.—DRAWN BY GRANVILLE PERKINS.—Engraved for the American Agriculturist.

Among the Salt Meadows.

The sea and the land are in constant warfare. In some places the sea encroaches upon the land, while at the mouths of our large rivers the land generally gains upon the sea. These rivers bring down large quantities of earthy matter, organic and inorganic, which is deposited in what geologists call alluvial deposits. Within a short distance of New York we have abundant instances of this fact. Thousands upon thousands of acres, as the rivers approach the sea, are made up of this deposit. These salt-water meadows are more level than a Western prairie, and were it not that the salt water allows the growth of only certain plants, they would be most valuable for cultivation, for they are rich in organic matter. These meadows are penetrated by creeks which generally have a most tortuous course, and as the surface of the land is but very little above that of the water, one finds that what appears to be a broad and unbroken meadow is impassable on account of the numerous water courses. One of our artists has been down on the coast of New Jersey, and has sketched one of these inlets, in which he and the engraver have suc-

ceeded in giving us a sunrise effect, rarely produced in a wood engraving. The rude boat, with its patched sails, is loaded with "punk," which is much employed as a fertilizer by the farmers in that neighborhood. This we understand to be a kind of submerged peat, which is, in some localities, collected in large quantities. The specimens which were forwarded have failed to reach us. Those who live near the sea are able to avail themselves of some of the vast treasures that are cast into it. The waste of a large city is something fearful to contemplate. Every day there is thrown out and borne seaward that which the land is starving for. The waters for hundreds of miles inland bear in their turbid streams the richest fertilizing materials. The farmers near the sea get it back in the form of sea-weed, salt muck, punk, fish, etc. Those who live farther inland buy it in the form of the different guanos. How to stop this great waste is one of the problems of the day. In England, the best agricultural chemists and the most skilled engineers are at work at it. Let us take a lesson from the Chinese and Japanese, who, in this particular, are far in advance of us, and stop this impoverishing waste. They utilize everything which can fertilize.

Pasturing Meadows.

It is a bad thing for all meadows to feed them after mowing, except that rare class where the vegetation is too rank to make good hay. If a field cuts four tons of hay to the acre, feeding a few days might not harm it. But for ordinary mowing land cutting only half as much, grazing cannot fail to reduce the next year's crop, and to shorten the period during which the land can be kept in grass. We noticed this summer in an old meadow the great difference in the yield of hay inside of an old stock-yard, and upon the adjoining land. The circle where the fence had stood was very distinctly marked by the ranker growth of grass. Outside, there had been grazing all through the fall. Inside, the fence had protected the grass. Though the outside had the droppings of the cattle, yet the yield upon the inside was at least a third more, and there was no other noticeable cause than the difference in grazing. It is true that by pursuing this plan there is more old fog upon ungrazed land, but that is just what the roots of grasses need for their winter protection. The ground does not freeze so deep, and the grass starts earlier in the spring and makes a larger crop of hay.

Australian Glory Pea.—*Clianthus Dampieri.*

[Recently we have derived great pleasure in seeing the Glory Pea successfully cultivated by one of our horticultural friends.

The plant is such a striking one, both in color and habit, that we procured from him materials for making an engraving, and the following account of his method of treating the plant. — Eds.]

In compliance with your request I propose directing the attention of your readers to one of the grandest ornaments of the flower garden—the "Glory Pea." I flowered this plant for the first time in 1856, and the variety known as *albiflora* in 1867. I at present (Aug. 1st) have one plant in my garden with eleven trusses of its gorgeous flowers in the greatest perfection. To prove that the Glory Pea is all that the most enthusiastic lover of Flora's gems can ask, I need but cite the fact, that our friend the Editor has visited my plant at least once a week for the last month. As evidence that it attracts others, less versed in floriculture, our friend noticed a bare strip upon the lawn, which led from the adjoining path to the plant, and he sarcastically remarked that "the path leading to the Glory Pea was more trodden than that leading to church." The *Clianthus* continues flowering for two or three months. The color is a rich, brilliant crimson, with a polished black boss on the upper petal of the flower, each margin of the cleft in the black boss being tipped with a narrow band

of pearly white. The variety *albiflora* is white throughout the centre spaces of the flower, belted with brilliant rosy crimson, and marked with the black boss—presenting an unique and exquisite combination of tints. There is no reason

leading seedsman that the seed will succeed if sown in the open ground; but this we are inclined to doubt until we have established the matter by experiment. Our experience teaches,

which it is grown is too moist, it will damp off; and if allowed to become pot-bound in small pots disease will attack the roots. Another year we shall try the experiment of sowing seeds

in the open ground, and will report the result. As regards soil it is easily suited; but it will grow and bloom all the more freely for a liberal allowance of thoroughly decomposed manure. I trust that your numerous readers will cultivate this gorgeous plant; and if their efforts should prove as successful as mine have been, it will gratify AL FRESCO.



GLORY PEA.—(*Clianthus Dampieri.*)

that to insure vegetation the seeds require a bottom heat of from 80° to 90°. An ordinary hotbed is all that is required. The plant now blooming in my garden is one of several raised from seed sown on the 1st of April.

dromeda racemosa. The old genus, *Andromeda*, for sufficient botanical reasons, having been separated into several genera, this plant has, with several others, been placed in *Leucothoë*, which, being a proper name from mythol-

Many have been the failures in cultivating this beautiful plant, owing to the fact that it will not bear transplanting from seed pots or the seed bed. The roots are very brittle, and if injured in any way rapidly decay. The only successful mode of culture is to sow the seeds singly in two or three-inch pots in light compost. As soon as the roots are found coiled round the ball of earth they must be shifted into 5 or 6-inch pots, in which they may be grown until about the second week in May, when they can be planted out in the open ground. The *Clianthus*



CLUSTERED LEUCOTHOË.—(*Leucothoë racemosa.*)

why the *Clianthus* should not be found frequently in our gardens. The plants should be grown and sold by our nurserymen as cheaply as verbenas and petunias. It has been stated by a

is a plant which a gardener would call "miffy"—that is, difficult to keep in health in its early stages of growth. If supplied with too much water, or if the atmosphere in

ogy, cannot be translated. If the shrub has a common name in any locality, we should be glad to learn it. The plant grows from New England to Virginia, and may be easily cultivated.

The Clustered Leucothoë.

It seems strange that a shrub which in May and June presents so fine an appearance as the Clustered Leucothoë, should be so little known. We do not recollect to have ever seen it in cultivation, except, perhaps, in Central Park, where it was left among other desirable native shrubs. The shrub grows from four to six feet high, and in its foliage and general appearance much resembles a huckleberry bush. The flowers are arranged in very close, one-sided racemes, and all point downward with such regularity that they have been compared to rows of teeth. They have a pearly whiteness. The fruit is a small, dry pod. The engraving gives the summit of a branch somewhat reduced in size. The botanical name of the shrub is *Leucothoë racemosa*. Those who studied plants many years ago will recognize this as what was then called *Andromeda racemosa*.



INDIAN PIPE.—(See next page.)

The Indian Pipe.—(*Monotropa uniflora*.)

Among our northern plants we know of none more grotesque, or more likely to arrest the attention of the indifferent observer, than the Indian Pipe we have figured. A while ago we were walking through our woods with a city friend, who noticed curious white spots upon the ground. He asked what these were, and was told if he would come in two weeks he should see. He came, and the engraving shows what these white spots came to. A pure waxy white stem, so singularly white that it has been called the "Corpse Plant," lifts itself up, bearing along its length dead white leaves, and at its summit a single flower. This flower is bent downwards, while it is a flower, but in fruit it is erect. During the flowering season, a clump of this plant presents a most striking appearance. There are usually several in a group, all of a pure, ghostly white, 3 to 8 inches high, and often with the tops of the stems turning the same way. The plant is found in dark and rich woods, and from its place of growth, as well as its singular appearance, is usually taken for a fungus. The slightest examination will show that it is not a fungus, but a flowering plant, as it has ten stamens and a very large pistil. The botanical generic name, *Monotropa*, is from the Greek, meaning "one turn," as the summit of the stem is turned to one side. The specific name, *uniflora*, was given on account of its having but one flower. While the plant is of such a pure white, when plucked it soon turns to a jet black. Dried as botanical specimens are usually dried, it is thoroughly black. One of our friends is making an experiment with various solutions, to see if he cannot preserve this plant in its colorless condition. Those who mistake the plant for a fungus are not so very much at fault, as it has all the habits of a fungus. It grows on decomposing vegetable matter, and may have an attachment to living plants. The engraving given upon the preceding page was taken from an undersized specimen, which grew in a rather dry place.

Garden Edgings.

We have referred to the matter of garden edgings more than once, but recent correspondence requires that we should notice it again. We think it a matter upon which too much stress is laid. The old style of gardening required that every border and bed should be edged with box or some similar plant. Where beds are cut in the lawn, edgings can very well

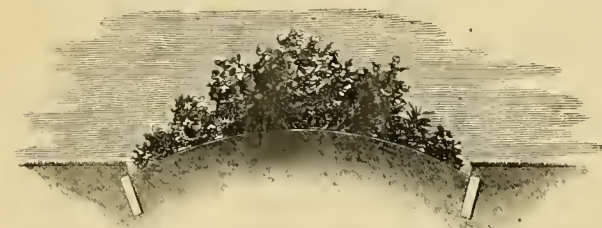


Fig. 1.—EDGING WITH BRICK.

be dispensed with, the grass itself being a sufficient setting for the plants. Considerable care is required and frequent use of the edging knife, to prevent the grass from running into the bed, but in well-kept grounds this is easily done. Where the lawn borders upon a walk, or where a flower border is to be separated from a walk, one of the most permanent and available edgings is one of brick, set half or more into the ground, and close together. Moderate curves, as well as straight lines, may be made in this

way. If the red color is objected to they may be washed over with water cement, which can have its color modified byumber or other desired color. Box is the best living edging, but it implies care, and at the best, requires resetting every few years. When raised beds are made in lawns, their outline may be maintained by an edging of bricks set as shown in figure 1. Board edgings are intolerable, as they warp and decay to an annoying degree. A correspondent suggests an edging of iron—

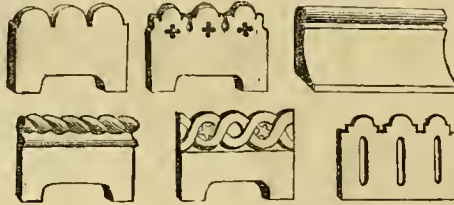


Fig. 2.—EARTHEN-WARE EDGINGS.

boiler-plate we suppose—with iron stakes which are to be thrust into the ground riveted to it. This would be too difficult to procure, too expensive, and when set, would rust, if not protected by coal tar, which would make them of an unsightly black. We hope that some of our potteries will furnish such edging tiles as are in use in England, and as a hint we give in figure 2, some of the styles approved abroad.

Notes from "The Pines."—No. 4.

Bean lovers will stick a pin here and remember it next season. The Dwarf Wax Bean is a good thing—not so good as the Giant Wax (pole), but it is after that style,—and then so early! Planted a few days later than the Early Valentine, it was a week ahead of it. It is not a "string" bean, because it has no strings, but it has a great deal of "snap" about it. The pods look whitish and sickly, but just try them! They do not boil down into flabbiness, but keep their proper rotundity. For bean salad they are splendid. Perhaps the reader does not know bean salad. Beans, oil, and vinegar. If oil is objected to, as it is by some, try butter and vinegar, but don't forget the beans. The Household Department will please excuse any trespassing, but I am an enthusiast on salads.

Is it not strange to note how few people use their eyes? I had a handful of chestnut blossoms, from which Mr. Beaulieu made the beautiful drawing on another page, and a gentleman at the station, as we were waiting for the cars, asked me what flowers I had. He probably did not suppose that one of the *Agriculturist* staff would have any common thing. Yet this man was born and "raised" within a mile of the tree from which the blossoms came. When a child I read a story by Miss Edgeworth (I think), called "Eyes and No Eyes." You could not do better than to publish that, or something like it, in your Boys' and Girls' Department.

A distinguished Senator once wrote to a distinguished Cabinet officer a letter which read as follows: "Stick." It was not very long, but very emphatic. I not being a Senator and never expecting to be, humbly say "stick," for this is the time at which all Chrysanthemum growers should stick. The autumnal gales will come, and then where will you be? If there was ever a plant constructed for the particular

purpose of being broken, it is the Chrysanthemum. If it were human, I should say that it had the "break bone fever," but as it isn't, I say "stick."

Our Walks and Talks editor says that some of us think that he has fall following on the brain. If his fall following does as much good as our summer following he may be insane in that direction as much as he likes. Taking an old place that was overstocked with weeds our first business was to subdue the land. A large patch was summer fallowed, and as soon as the weeds showed themselves the cultivator was put through. Kind neighbors advised that the piece should be put in this or that crop, but we kept on cultivating it for weeds. A week or two ago it was sown to ruta-bagas of various kinds, and if there is a patch in the whole county that shows a better stand and is more free from weeds, we should like to see it. Having once got the start of the weeds it is a comparatively easy matter to keep the supremacy.

Several have asked me for my potato experience. I have none to give until the potatoes have completed their career and the vines have died. It would not be fair, for some potatoes have a wonderful way of catching up on what we may call the "home stretch." For instance, we had potato A as large as pullets' eggs, while potato B was only as large as good-sized peas. A week after potato B was nearly equal in size to potato A. An opinion given at this time would have been manifestly unfair. So with the Tomatoes. We have 21 different sorts, all growing in open field culture. Those which set the earliest do not fill the soonest, and any verdict as to productiveness, until all are ripe, would be premature.

I must, however, say a word for the Black Pekin Egg Plant. It has such an upright growth and such a marked foliage that it is worth growing as an ornamental plant,—and it was introduced as such. But for its fruit it is remarkable; we have them almost large enough for the table while the regular New York Improved is just thinking about fruiting.

It is a good thing to be able to give one a new sensation, provided it be a pleasant one. A friend was here who had never eaten beet greens. Now, after spinach, if there is anything better than a juvenile beet,—a beet just beginning to be-it, thinned out that its brothers might grow, and then exalted to the table with a plenty of butter and just a dash of vinegar—I want to see it.

People talk about the squash-bug and the striped bug, but neither is as bad as a brother to the striped bug, the *Galeruca decem punctata*, which means the 10-spotted Galeruea. It looks as innocent as a lady-bug, has the same shape, but is yellow, with 10 black spots. If this fellow gets on the vines it leaves its mark. They look as if they had been scorched. The striped bug, another *Galeruca*, is troublesome when the vines are young, but this 10-spotted fellow comes at any time. It is of no use to chase him after sunrise, for he is livelier than his pursuer. In the early morning when he is chilled he may be caught, but let him alone and two or three will during the day spoil the most vigorous leaf. Fortunately we planted some for the bugs, but then it is discouraging to see the havoc this rascal will make.

Then the borer. Entomologists tell us to cut

him out of the squash and melon vines; but unfortunately the vine is killed before the borer is discovered. Your vines are all right in the morning, but at night every leaf is drooping, all on account of this rascally borer. We should like to see any surgery that will restore vines so afflicted. They have thus far taken only one vine in a hill, but suppose they should take all, where would we be?

Sprouts.

In early spring, sprouts are in great demand in the New York market. They come in after the winter spinach has gone, and at the restaurants we find sprouts substituted in those dishes



SPROUTS OR GERMAN GREENS.

in which spinach was used earlier. "Corned Beef and Sprouts" takes the place of "Corned Beef and Spinach" on the bills of fare. Sprouts are Kale or Borecole, and are in reality a form of cabbage that does not head, but forms a great abundance of wrinkled leaves, which, when they have been frosted, are really delicious eating, whether taken in early winter or left until spring. The seed is sown in September in rows a foot apart, and cultivated the same as turnips. On light soils the plants pass the winter without any protection, but on heavy ones it is better to give a covering of bog or salt hay, or some similar material. An old gardener, a neighbor of ours, says that "the curliest is the best," and saves his most curly plants for seed. The common market sort, of which we give an engraving, is known as German Greens. There are several new varieties which we are testing, and may, at another time, report upon them.

The Pickle Crop.

There is scarcely anything upon which we have so many inquiries as cucumbers for pickles. Many persons have heard that pickles are a profitable crop, and having planted them, write to us to ask how to dispose of them. Let us look at the matter. Supposing one had planted a crop of flax or cotton, would he expect us to tell him how to convert these fibres into cloth? The raising of cucumbers is one thing, and the manufacture of pickles is another, and as distinct a branch of business as that of the cotton raiser and cotton spinner. Those who have made money by raising cucumbers for pickles are those who live near pickle factories, and could contract for the sale of their crops upon delivery. We do not think it

will pay for those who are not thus situated to go largely into the business of raising cucumbers. There are many obstacles to overcome in "getting a stand," and when the vines are in fruit a man can hardly earn his wages in picking cucumbers. A highly intelligent friend in Michigan, who keeps an account with every crop, has given up the cultivation of cucumbers on account of the expense of picking. He had many acres in cucumbers, and until he kept an account he thought them profitable, but although he was doing a large business in shipping them to Southern markets, he has given them up. Near city markets and pickle factories, where they can be sold at once by the hundred, cucumbers may be raised at a fair profit, but when one has merely to salt them to preserve them, it is doubtful if it will pay. As to the growers converting them into pickles, it is not probable that it will meet with any success, as that is a branch of business by itself. In putting up cucumbers in salt and water for shipping, the friend above referred to operated as follows. He used new barrels. One head being taken out, about four quarts of salt were put in the barrel, which was then filled with cucumbers; four quarts more of salt were placed upon the cucumbers, and the head carefully replaced. The barrel was then filled with water through the bung-hole, and tightly bunged up. The barrels then had their position changed every day or two for a week or more, to insure that the salt was thoroughly dissolved, when they were ready for shipping. He says that cucumbers put up in this way and kept tight will keep in good condition for six months or more.

The Blackberries.

It is strange that the growth of a blackberry is not generally understood. We have given the whole story many times, and yet here are a half score of letters asking about the blackberry. Now let one of these writers go to his blackberry patch, and he will see two, three, or more used-up looking canes loaded with fruit, and as many more vigorously growing green canes which have started up this year. Pick all the fruit that ripens, and when the last berry is off, cut out the old canes. The next year's crop depends upon the growth of the new green canes. Top all of these new canes that are over five or six feet high. By "top" we mean cut them off. It should have been done long ago, but better now than not at all. Had it been done earlier it could have been accomplished by the thumb and finger, but now the shears must be used. The canes now will have side branches, and these should not be allowed to extend themselves longer than about eighteen inches. Three or four canes to a stool are enough, and these should be kept tied up to a stout stake. We prefer to use tarred twine for these rough fellows. Suckers will come up between the rows and everywhere. It generally is the case that these can be sold as soon as vegetation ceases, for a fair price; if not, cut them down before they get too woody to be cut with a sharp hoe. As to varieties we still place the Kittatiny at the head of the list.

For market the New Rochelle will be found profitable where it is not winter-killed, but for blackberries "as are blackberries," we think the Kittatiny about as good as those we used to pick from the wild bushes on "Old Point Judith"—which is saying a great deal. A blackberry patch is something uncomfortable to handle. Our friend Wm. N. Doty, who is always inventing something, has brought us an ingeniously contrived pruning chisel which we think will prove a great help. We only wait for our fruit to be off to allow us to try it.

Winter Spinach.

One of the profitable crops of the market garden is Spinach. In the latitude of New York it is sown about the middle of this month in drills about a foot apart, and kept well cultivated until frost sets in. In places north of here it will be necessary to give it some protection. In early spring it is ready to cut, and brings a good price, and it is off of the ground soon enough to make way for other crops.

The Rat-tailed Radish. (*Raphanus caudatus*.)

It is about time that this humbug was exploded. Some ten years ago our friend, Isaac Buchanan, brought from Europe as a very precious thing, the seeds of the Madras Radish, the pods of which were to be good for eating or for pickling. With many thanks to our veteran florist we grew the plant, but could not see that the pods were either eatable or pickleable. Later, the *Raphanus caudatus* came out, and ten seeds were sold (we think for 25 cents,—it may have been more. This year we grew it, giving it the best possible treatment. It gave a generous supply of pods, something longer, perhaps, than our old Madras radish. The English papers had landed the pods of this radish as something excellent when cooked and treated with drawn butter, in the same way as asparagus. We had a guest from the city, and wished to treat him to a novelty, so the rat-tails were picked and nicely served. We never ate boiled rat-tails, but have no doubt they would be preferable to the pods of this rat-tail radish, albeit some of them reached the prescribed length of eighteen inches. Neither did we ever eat boiled shoestrings served with drawn butter, but in trying the *Raphanus caudatus* we think we got a good idea of them. It was noticed that no one asked to be helped the second time.

NUTRITIVE VALUE OF DIFFERENT CROPS.—Mr. J. D. McGuire, of Maryland, referring to the article on this subject in the *Agriculturist* for May, writes: "The following statement, which I took from the balance sheet of the Agricultural Academy of Hohenheim, for Nov. 1863, whilst I was a student there, will give you in part their estimate of how many pounds of each article are equal to 100 lbs. of hay. Fifteen head of horses, 122 head of horned cattle, and 890 sheep were kept there and fed on this principle: 100 lbs. of hay are equal to 275 lbs. of beets, carrots, or Jerusalem artichoke; 200 lbs. oat straw, or potatoes; 125 lbs. Brewers' grains; 60 lbs. oats; 50 lbs. groats or oil-cake."

THE SURPRISE APPLE.—This is a small, rather flattened apple, having a yellow skin with a red blush. It gets its name from the fact that one in cutting it open finds the flesh, much to his surprise, of a red color. The quality of the fruit is poor, and it is grown only as a curiosity.

The Chestnut as an Ornamental Tree.

If the chestnuts ever bloomed more copiously than they did this summer, we failed to notice them. For many days it was a pleasure to see their masses of flowers and glossy foliage, and we wondered why the chestnut was so seldom used as an ornamental tree. It has every desirable quality to recommend it; it is perfectly hardy, makes a rapid growth, and has great dignity of habit. It forms a dense shade, and its glossy foliage, but little liable to the attacks of insects, produces admirable effects in contrast with trees of a lighter color. It is most beautiful when in flower, its abundant, long racemes appearing in great numbers at the end of every twig, and the effect of the whole is one of airiness and grace. The blossoms are of a yellowish-white, or cream color, and are produced in such masses as to make the tree a conspicuous object. Then it blooms the latest of all our forest trees. As we write, in the middle of July, our woods are gay with them. Many persons wonder how such a long and slender blossom can produce chestnuts. But few people carefully examine the flowers of forest trees. The flowers which make the show are not the ones which produce the fruit. The chestnut is a *Monocious* tree, i. e., produces flowers which are all staminate (male), and others which are all pistillate (female), on the same tree. The staminate and sterile flowers are those which make the most show. The individual flowers are small, with many stamens, and are irregularly clustered together on a long and slender stem, forming what the botanists call a *catkin*. The pistillate or fertile flowers appear at the base of the upper catkins of the sterile ones. There are usually three of these inclosed in a leafy envelope or involucre, which afterwards becomes the prickly chestnut bur. The engraving, though reduced in size, shows the two kinds of flowers distinctly, as well as the general appearance of a flowering stem. The catkins of staminate flowers are sometimes worked into summer bouquets, to which they impart a graceful appearance. The Chestnut is easily raised from the seed, provided it is not allowed to become dry. The nuts, after a day's exposure to the sun, should be packed in sand until planted. Autumn planting, with a covering of forest leaves, would be best. Nursery trees are readily transplanted, but trees from the woods, if taken after they are two or three years old, seldom live, unless they are first prepared by root-pruning. Our tree is considered as a form of the European *Castanea vesca*, which is known with us as the Marron and Italian chestnut. Our native trees present great differences in the size of the nuts, and doubtless one by experiment with the best native seedlings could make a great improvement in the fruit. In speaking of the chestnut as an ornamental tree, we do not forget its great value for timber.

SETTING TREES.—"T. C.," Lockport, N. Y., asks about setting trees. He evidently thinks that the year of the setting has to do with the

year of bearing. He wishes to have fruit every year, and thinks that by planting a part of his orchard one year and a part the next, he will be able to get a half crop each year. The time of setting the tree has nothing to do with the time of its bearing. Some varieties are so precocious that they will even bear in the nursery rows, while others are ten years in coming into bearing. Orchards fruit every other year for the reason that in their "bearing year" they



FLOWERS OF THE AMERICAN CHESTNUT TREE.

carry too much, the trees become exhausted, and it takes a whole year for them to recuperate. In our rough way of doing things we have not yet reached the point of cultivating our orchards. It is cheaper for us to let the trees overbear one year and rest the next, than it is to thin the fruit and thus secure a moderate crop every year. Those who have dwarf apple trees thin their fruit and have a crop each year. Labor is not cheap enough to allow the thinning of fruit in the orchard, and it is better as things now are to have one year of plenty and another of scarcity, but the time of setting the trees in the orchard has nothing to do with it.

Preparing for Spring Planting.

Very few people know that the cabbages and cauliflowers which appear in June and July, as well as the lettuce, which comes much earlier, are all from seed sown in September. South of

Pennsylvania, the young plants may be wintered in the open ground. In the latitude of New York we are obliged to use cold frames, in which the plants are placed to protect them against sudden changes. Seeds for plants for the earliest crop next spring are to be sown from the 10th to the 20th of the present month, in the open ground. The plants thus raised are to be kept in a dormant state through the winter in cold frames. The manner of constructing cold frames and the treatment of the plants we shall give in a timely article. Let the seed be sown in a well-prepared bed, and keep the plants free from weeds, and properly thinned, so that they will not be drawn up and weak when transferred to the beds. If one is near a town it will pay to put in more plants than he needs for his own use, as in spring he will find a ready sale for the surplus.

Drying-houses for Fruit.

Several have inquired about houses for drying fruit. The most primitive arrangement we ever saw for drying fruit by heat was in Missouri. A fireplace was dug in a bank and covered with flagstones; the fire was made below, and the fruit was placed on the stones. A roof was built over the oven, to protect the fruit from rain and dew. The most elaborate and extensive arrangement we have seen was that of a large desiccating establishment, which prepared dried vegetables for the army during the war. Here were immense chambers with pipes heated by steam running along the floor, above which were racks holding trays with canvas bottoms, containing the vegetables to be dried. Where there is any considerable amount of drying to be done, it is desirable to use artificial heat, as then one is independent of the weather, the drying goes on more rapidly, and insects can be kept away. There are several patented houses which no doubt answer a good purpose. We do not know what the patents cover, but we do not think that the principle of applying the heat below the thing to be dried can be patented, else every house heated by a hot air furnace is an infringement. We gave in June, 1866, an illustration of a drying-house which shows the general principle, and will no doubt answer a good purpose. The object is to get a constant supply of hot air to pass over and among the fruit or other article to be dried, and to provide ventilators for the air to pass off as soon as it is charged with moisture. "W. H. K.," Northampton Co., Pa., says: "I intend to build a house 10 x 8 feet, and 9 feet high, with shelves all around from top to bottom, and heat the same with a stove. What do you think of it?"—We think that W. H. K. will find trays which can be placed upon racks much more convenient than shelves, and that he will find it advantageous to put his stove in a pit, and carry the pipe around the building as low down as possible. Provide for admission of cold air below the pipe by openings which can be regulated and an adjustable ventilator at the roof. Those who have hot-bed frames and sashes will find them of use in drying fruit, etc., and a very convenient substitute for a drying-house.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

The Table—Order and Ornament.

It is curious to see how much correspondence our remark about the use of the fork has called out. Some write us to thank us for our advocacy of the fork, and others to ask us how it is possible to eat mashed potatoes and the like, with the fork. We have tried to define our position in this matter. What we call "society," or "good society," has decided that the food should be conveyed to the mouth with the fork, and not by the knife. We cannot argue about this, and our friends will ex-



Fig. 1.—TWO-TINED FORK.



Fig. 2.—THREE-TINED FORK.



Fig. 3.—SILVER OR PLATED FORK.

cuse us from discussing the point. It is as much established as that one should not put his own knife into the butter, or his fingers into the salt-cellar. Certain usages become established, and the best way is to conform to them. Now about the fork. If one has the old-fashioned two-tined fork, fig. 1, it is almost impossible to use it in conveying food to the mouth. Steel forks are now made with three tines, as in fig. 2, and are very comfortable to use, but the fork used in all well-to-do families is of the shape shown in figure 3. This may be of silver or plated ware. Our publishers offer as premiums some excellent plated forks. The writer uses these forks and with great satisfaction. Another question comes up—"Should green corn be cut from the cob or is it proper to gnaw it from the cob?" We say gnaw by all means, if you wish to enjoy the green corn. All rules of table usage should be subservient to common sense, and no one, to our notion, ever fully enjoyed green corn who did not gnaw it from the cob. Then again we are asked as to "passing things." It is the business of every one at a private table where there is not a regular waiter, be he guest or otherwise, to see that his neighbors are helped to the things before him. An unobtrusive look at the plates will indicate the right time to ask if one will have this or that. Now a word to the lady of the family. If you ask a guest to take this or that, and he declines, let that settle it, but do not say "do." People, as they average, are very moderately sensible, and when they politely say "no," that should be the end of the matter. It is the other side of hospitable for the host or hostess to insist that one shall take that which he does not want.

Citron and Citron Melon.

A correspondent in Texas wishes to know how he can convert the citron watermelon into such citron as comes in boxes. He cannot do it, as the two are very different things. The citron imported in boxes is the rind of a large, thick-skinned lemon-like fruit, preserved in sugar and dried, and has a positive flavor of its own. The citron melon is a thick-fleshed watermelon, the fleshy part of which, tasteless in itself, is only a medium to absorb sugar and flavors, and cannot be by any means converted into a substitute for the true imported citron. The citron melons, so-called, when well grown, are used for preserves, without regard to their ripeness. The thick, fleshy portion between the rind and the seeds is cut into convenient sized pieces—frequently into stars, and other fancy shapes—and then preserved in syrup, to which ginger or other desirable flavoring material has been added. A more decided green color is obtained by first soak-

ing the pieces in a weak alum water. The citron melon is, just as watermelon rind, simply a sponge to soak up syrup, and this syrup may be flavored with whatever may be desired. The transparency and attractive appearance of the sweetmeat make it a favorite with many, but we had rather have one quince, properly "done up," than all the citron melons that were ever grown. Since the above was in type, Aunt Hattie has sent her method of preserving the citron melon.

The Care of Lamps.

A good lamp with good kerosene gives a light so fine and steady that those who live in the country need not regret the absence of gas. It is true that the care of lamps takes a little time, while gas is always ready and to be had by turning the stop-cock. By a little system and a few simple contrivances the labor of taking care of lamps is reduced to a trifle. In trimming the wick, do not use seissors, but simply scrape off the charred crust with a knife. A little practice will enable one to leave a perfectly smooth edge to the wick. The metallic tube which encloses the wick, whether it be flat or circular, should be kept free from all incrustation. Even the best oil will encrust it somewhat, and this, if allowed to accumulate, will injure the quality of the flame. The chimneys must be kept clean. Any deposit of dust or smoke upon them causes a loss of light. A straight chimney, such as is used upon lamps with circular wick, is easily cleaned by means of a soft cloth wound around a stick.

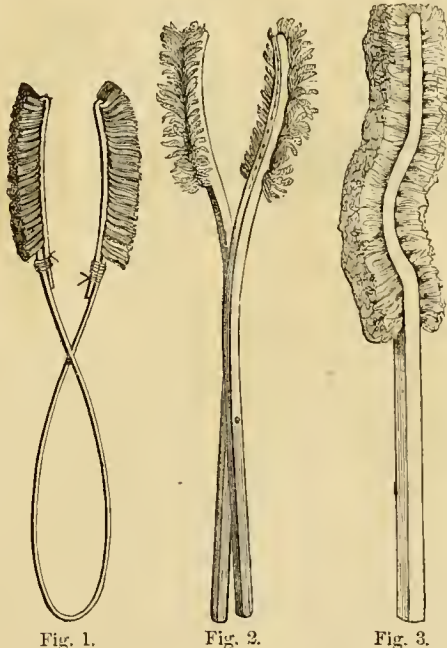


Fig. 1. Fig. 2. Fig. 3.

It facilitates the operation to breathe into the chimney. When the chimney is not straight, but has a swelling or bulge, a curved stick is necessary. Figure 3 shows a curved stick to which lamp wick or coarse worsted threads are attached. Figure 2 shows a double cleaner, the two parts of which are joined by a rivet. By compressing the handles, the brushes are spread far enough apart to reach the wider portions of the chimney. Figure 1 shows a similar contrivance, in which the brushes are attached to an elastic wire handle. Even with the best of care chimneys will require to be occasionally washed with hot and strong soapsuds.

Feather Dusters.

Small feather dusters are most convenient to have in the household, and are much preferable for most purposes to the turkey wing which is so frequently used. Great quantities of these dusters, both large and small, are made and sold. The larger ones are made of various kinds of imported feathers, while for the small ones the feathers of

the barn-yard fowls will answer a good purpose. When fowls are killed, preserve the longer feathers with care, especially the tail feathers of the male

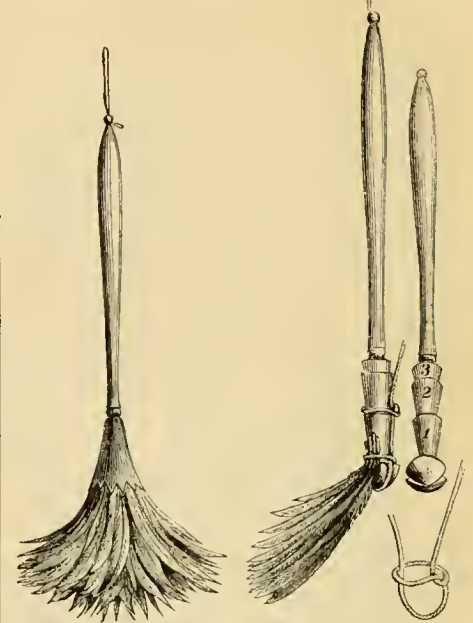


Fig. 1. Fig. 2.

birds. The peculiar form of the duster, figure 1, is given to it by the shape of the lower part of the handle to which the feathers are attached. The shape of this handle is shown at the right hand in fig. 2. There are at the bottom three cones terminated by a knob, which last has a groove to hold the string. One handy with the jackknife can readily whittle out such a stick, and by the aid of sand-paper make the handle part smooth enough to be painted. In attaching the feathers the shortest ones are put on first. A knot is made in the binding string like that shown in the lower part of fig. 2, and the manner of putting it on is shown in the same figure; a row of short feathers is put on, and then the string is carried to the notch above, a row of longer feathers put on, and then again, when the longest and handsomest feathers are used. When all are securely bound and tied, a conical cap is put over, to conceal the fastenings and give a finish to the work. This cap may be of thin leather, or of some brightly colored fabric. We have seen red flannel used with good effect. The whole is made to look more workmanlike by clipping off the ends of any feathers that protrude too much.

Household Talks.

BY AUNT HATTIE.

A lady from Michigan wants Aunt Hattie to give the best method of packing butter for market and home use, also a recipe for apple jelly, and one for citron melon preserve. The butter question goes on the table for the present,—not but what it is an important one, but partly because its importance demands more attention than the Talks allow, and partly for the reason that I design to write a separate article treating on the cheese and butter subject.

CITRON MELON PRESERVE.—Cut the melon in slices an inch wide, pare, and take off the pulp so as to leave the surface smooth and even; leave it in lengths or cut into squares according to fancy. Weigh the melon, and to each pound allow one pound of good white sugar, and one large or two small lemons. Put the citron into a porcelain kettle, cover with clear water, and boil gently until a straw will penetrate the fruit readily. Cut the lemons in slices and take out the seeds, and after the melon is removed from the water, put the lemons in and let them boil a few minutes. Remove, and add the sugar, and if you judge that there will not be sufficient juice to cover the whole when done, add a little more water. Boil until clear, skimming if necessary, add the melon and lemon, boil a few moments all together, and afterwards

put into pots, jars, or bottles. This preserve will keep perfectly in jars if cooled, and then covered with pasted paper the same as jelly, or it may be put into a crock, the lid of which is well secured.

CRAB-APPLE JELLY.—Remove the specks, stems, and seeds, from Siberian crab-apples, and throw them into a pail of water. Put them into a porcelain kettle, cover with water, put on the fire, and stew until very tender, being careful not to let them burn or adhere at all to the bottom of the kettle; strain through a clean crash towel or cloth, pressing and wringing and straining, until the juice is extracted, and nothing but a small mass of dry pulp remains, which may be thrown away. Strain the juice through another cloth, or, what is better, a good flannel jelly bag; strain again, if it is wanted extra clear and fine. Return the juice to the kettle, measuring as you do so with a pint measure, and allow for each pint a pound of granulated white sugar. Place on the fire and let it boil briskly for twenty-five minutes. Now remove the kettle a little back, if the fire is large, and stir in the sugar gradually. If all has been done properly, the jelly will form while you are stirring it, but it may be necessary to allow the kettle to remain on the fire, where it will boil very gently, or rather simmer, for about ten minutes. The judgment must be the guide in this matter. *Obs.*—You may boil the juice as fast as you like, before the sugar is added, being careful not to let it burn, but after the sugar is added, I think it better to boil gently. Some persons put half as many green grapes to the apples before stewing. It is well to let the sugar stand in an open oven while the juice is being boiled, but you must be careful not to let it brown in the least, and it should be stirred occasionally. Of course a solid jelly will not be formed in the kettle; it must be turned into little cups or jars, and allowed to stand until next day, when it will probably be firm and clear. White paper, cut of the size and shape of the surface of the jelly, should be dipped in brandy and placed upon it; afterwards some white paper should be pasted over the mouth of the cup, and when dry, mark upon it the kind of jelly and the date of making. Store in a dry but cool closet or store-room. I never keep jelly in the cellar.

PEACHES—TO PRESERVE.—It is, I believe, acknowledged by every one that the old-fashioned way of doing up peaches, pound for pound, is not the best. Even those who prefer to do up their strawberries, plums, and raspberries in this way, admit that the delicious natural flavor of the peach can be retained only by bottling or canning.

BOTTLES.—If old bottles are to be used, examine them carefully, reject any that are in the least cracked, see that the lids are perfect. It is well to have these things attended to beforehand, as you may have fruit brought in that will require to be preserved from decay immediately, or it may be necessary to purchase new lids, or you may find that you will not have bottles enough for the quantity of fruit at your service. I should advise persons with large peach orchards, and large families, to purchase the two-quart bottles, as they cost only a trifle more than the quart. It is not always necessary to purchase new lids for old bottles, as an experienced person can hermetically seal the mouth with a piece of strong cloth tied securely around the outside, and well covered with rosin and tallow, made in proportion of an ounce of tallow to half a pound of rosin. Be careful in this case that the entire opening and rim of the mouth of the bottle is covered with the wax and watch it to see that no blisters rise.

TO SKIN PEACHES.—To two quarts of wood ashes add four quarts of soft water, place in an iron pot, ashes and all, let it come to a boil, throw in a dozen peaches, take them out almost immediately and throw into a pail of cold water. The skin will slip off without any trouble, when the round ball should be passed to another pail of clear spring water to remain until wanted for the kettle; put more peaches into the pot, and proceed in the same manner until all are done.

PEACHES—TO BOTTLE.—Put into the porcelain or clean brass kettle two quarts of water, and a pound

of sugar. Let it boil until the sugar is quite dissolved; put in fourteen, twenty-eight, or three times fourteen halves, if the peaches are small, and quarts are used. If the peaches are not stoned, ten, twenty, or thirty, should be put in, according (you will perceive my idea) to the number of bottles desired to fill at one instant. One quart will hold fourteen halves or ten whole peaches. Let them come to a perfect boil, and continue to boil for not more than two or three minutes. If the fruit is very ripe, more boiling will have a tendency to crack the peaches and make the juice muddy, whereas it is desirable to have the fruit unbroken, and the juice as clear as water. Fill the bottles as quickly as possible, taking a fork to put in the peaches, and filling up with boiling juice, using a very hot tea-cup for this purpose; seal immediately. All the juice from the kettle will probably not have been used, and more water and sugar should be added, and more fruit, until the process is completed. It is quite a help to have a kettle of water boiling on the back of the stove. Persons who have had no experience in bottling fruit should be reminded that intense heat coming suddenly upon the cool glass will crack the bottle, so that it is necessary to prepare the bottle by filling or nearly filling with quite warm water before using.

PEACH PIE.—Line a pie dish with a good paste, pare, stone, and quarter some nice, ripe peaches, and slice them on to the paste, adding a little sugar, cover with an upper paste, and bake until the bottom and upper crust are done perfectly.

PEACH PIE ANOTHER WAY.—Take a deep pie or pudding dish, skin a quantity of peaches, but do not take out the stones, and fill the dish, adding a little water and sugar. Cover with a good wholesome pastry, rather thick, and bake in a moderate oven, leaving the door open awhile, if the upper crust seems to have baked before the fruit is done. No under crust. To be eaten cold. Is delicious with sweet cream.

PLUM PIE.—Green gage or the blue plums make an excellent pie if treated the same way as the peach.

Moral Courage in a Housekeeper.

The following is extracted from a very sensible letter of a lady who adopts the signature of "Prudentia." "All food should be of excellent quality, but not too complicated, or too many varieties at a single meal. We should conscientiously avoid habituating children to concentrated or highly seasoned dishes, as it creates an artificial appetite, which, in its turn, craves stimulating drink. I think we should have the moral courage to set before our guests healthful food, that our example and influence may be felt in the right direction. There are so many choice fruits, canned, and otherwise preserved, that a satisfactory and at the same time unobjectionable meal may be prepared at any season of the year. There are a few choice friends in this vicinity who make it a point, when they visit each other, not to overdo culinary matters, that the woman of the house may enjoy a social time with the rest. Most of us do our own work, and must give our time to preparing meals."

Soap Making.

Soap making is an important household operation. We have already published some communications upon the subject, and now give place to one from Mrs. M. C. Ross, Warsaw, Ill., which has the merit of being direct and practical. She writes: "In the first place, if your wood is poor, your ashes will be poor and you will not have good soap. Take good care of your ashes, and one week before the lye is required, put them in the leach, *pounding them down solid*. It is easier done if they are dampened. Then pour on water until they begin to drip, after which let them stand one week to "rot," then hang on your kettles and commence running off lye for operations. By letting the ashes stand to "rot," as it is called, the lye is stronger, and the soap of a better quality, and not so apt to

be "livery." If the lye is too strong, I weaken it; if too weak, I boil it. The proper strength can be told by putting a fresh egg into it. It should throw the big end of the egg up above the surface to show about the size of a silver dime (if any one nowadays can find one to make the comparison). If the lye is a trifle weaker, the egg sinks. With lye of this strength, take a pound of clear grease, or its equivalent in common "soap grease," to each gallon of lye used, and set to boiling. After the grease is "eaten up," if the mixture will "eat" or take the plume off of a feather, put in more grease. If a white scum rises on top, skim it off, or put in more lye. This scum is grease, and should never be left until it is cold. Boil until it looks rosy as it runs off the stirrer. If not boiled too thick, all sediment will settle while it is cooling, and I prefer not to have the lye poured in as Mrs. Gage directs in an article in the May number. A former writer gives her trouble with grease that was too salt. I think if she had rightly known, her lye was too strong. I never have trouble with salty grease except that it makes the soap hard. A lady once put up her ashes with mine for making soap. It was so strong as to bear an egg entirely above the lye. I weakened mine and had no difficulty. She tried an experiment, and boiled all day; still, as she expressed it, "it would n't come worth a cent." An old lady seeing it, told her to pour water into it. She added nearly as much water as there was compound in the kettle. Instantly the soap came."

Ella's Ivy.—Ella came to visit her aunt, and as she was so much interested in plants we gave her a small cutting of Ivy in a pot. Never was there a plant that had such attention as that Ivy, during her visit. It was carried from one window to another, to get a more favorable aspect, as she thought. Every hour, almost, she asked if it did not need water. Ella went to visit her grandmother, leaving her Ivy in our charge, with particular injunctions to take care of it. A week after her aunt visited the grandmother, and Ella's first question was about her Ivy. The Ivy was taken good care of, and now Ella has the sole charge of it. It is pleasing to see the love of little children for some plant that they can call their own; they pet it as if it were a doll. There is no better plant for children than the Ivy. It will bear all the misuse they will give it, and repay all the care it gets by growing luxuriantly. The plant is a long-lived one, and that which is a pleasure to the child may become a delight in maturer years.

Indian Custard Pudding.—By M. E. E. 4 heaping tablespoonfuls of Indian meal, 1 egg, to 1 quart of milk; salt and spice; sweeten to taste. Beat the egg and meal together and pour in the milk, and stir twice while baking. Bake one hour slowly.

Spinach.—Wash the leaves, and boil tender in a very little water, salted slightly; drain dry; chop and return to the pan, seasoning with plenty of butter and a little salt and pepper. Heat a small dish and place the vegetable neatly in the center, smoothing the edges with a spoon or knife. Garnish with cold boiled eggs in slices.

Mint Chow Chow for Roast Lamb.

—By "Anna." Take one-third onions to two-thirds cucumbers, add spearmint, green peppers, and mustard, chop finely together, put into a jar, and add strong vinegar and salt; cork it up and in a few days it will be fit for use.

Grape Jelly.—By Aunt Mary. Pick the grapes from the stems, pour on water to nearly cover them, and cook until the skins split open; then put them through a sieve and strain the juice through a flannel bag. Put a pint of juice to a pound of sugar, and boil for fifteen minutes.

Silver Cake.—The whites of eight eggs, 1 cupful of butter, 2 of sugar, 3 of flour, $\frac{1}{2}$ of sweet milk, 1 teaspoonful of cream of tartar, $\frac{1}{4}$ teaspoonful of soda; mix all together, and bake in a moderately heated oven until of a light brown.

BOYS & GIRLS' COLUMNS.

How to Get a Farm.

We are often told how to obtain a good education, how to rise in mercantile business, and how quite poor lads have struggled up against many difficulties to high positions; but how can one, with only willing hands, a brave honest heart, and trust in God, obtain a farm that will not only bring him in a living, but secure to him a comfortable fortune? A Western lad has answered the question by doing this very thing. At sixteen, with a good, common school education, he left his father, in Kentucky, as he had no profitable employment for him. He hired himself to a neighboring farmer, the first year for only seventy dollars. Instead of expending his money upon himself in the form of clothes, or in the gratification of his appetites, he clothed himself decently in cheap, homemade garments, and loaned his money at six per cent interest. Working the next year, with a liberal employer for the times, by diligently laboring morning and evening, he was enabled to add to his education, by three months of schooling, an acquaintance with the higher branches of mathematics, and the rudiments of the Latin language. And at the end of the year, when he was eighteen years of age, he had an additional sum of ninety-six dollars to place at interest. But he had a larger and more productive capital than his accumulated earnings—he had become known in the community for his diligence, his economy, and his honesty, and his services were now in demand at a higher rate of wages. He was made, when nineteen years old, a Collector and a Sheriff of his County. When he entered upon his twentieth year, with his savings and the interest upon previous earnings, in addition to several periods of earnest study, during the winters, which had secured for him a superior education, with a respectable outfit of clothing, with universal respect among the neighbors, and the good will of all that knew him, he found himself the possessor of four hundred and eighty dollars; and at twenty-one he had increased this sum to five hundred and fifty. He now started for the farther West, and in a prairie State secured one hundred and sixty acres of fertile land, for one hundred and fifty dollars. A portion of his remaining capital enabled him to purchase stock and implements for farming. The second year gave him a good crop. His little store of money honestly acquired, his excellent education obtained in hours saved from sleep, his good sense and integrity, soon brought him the confidence and respect of his scattered neighbors. His habits of reading not only gave him an inexhaustible source of pleasure, but his agricultural books and papers aided him in increasing the size and value of his crops, and prepared him for the responsible positions he has been called by his fellow citizens to fill. He is now, although not an old man, a wealthy farmer, with broad, beautiful lands under cultivation around him, with large herds of cattle and flocks of sheep, and with every comfort that money, the respect of others, and an honorable and virtuous life, can afford. When speakers tell you in your schools, boys, that the highest offices in the nation are open to you, you may reasonably doubt of your success in obtaining them, for there are now too many applicants for them, and you may have reason to be thankful that you do not hereafter reach them; but a good farm, a comfortable livelihood, and a virtuous life, are open before you all. You need only your hands, good sense, perseverance, and the blessing of God, to secure them.



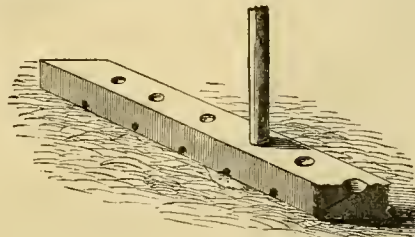
Ways of Getting a Living.

Some time ago we illustrated several of the old ways of getting a living which are to be seen in the streets of New York and other large cities. It is amusing to watch the curious customers who try the lung testers, strength

measurers, and the like. Sometimes a man appears with a small galvanic battery, and he may be said to make his living in a shocking manner. He allows the newsboys and others to take hold of the poles of the battery upon the payment of a penny. At first the shocks are very light and rather pleasant, but by a slight change in the instrument the operator is able to increase their strength to such a degree that they become difficult to bear. The trick is very amusing to the bystanders, whatever it may be to the victim. The little picture by the artist, not far from our office, tells its own story.

The Doctor's Talks—About Making a Fire.

It is a long time since I have talked with the boys and girls. Not that I have taken any the less interest in them, for I have occasionally put in articles without designating where they came from. I have so much to do with this, that, and the other, about the paper, that I seldom get time to talk with my young friends. Now I propose to talk to you about making a fire, and it may be, continue it through several numbers. With us, a fire is so much a matter of course, so easily to be had by the striking of a match, that we little think of the steps that have led up to matches. Now let us suppose that you were shipwrecked on a desert island, how would you start a fire? With matches, of course,—but there are no matches! The few that might have been in your pocket were water-soaked and useless. Flint and steel,—but on desert islands there is neither flint nor steel to be had. When a boy at school, did you ever rub a smooth button on the desk, or better, (or worse) one of those smooth seeds from the South which they call "burn stones," and having heated it as much as possible by friction, apply it to the hand of your next neighbor? I know it is a trick,



INDIAN FIRE STICKS.

but I would not give much for a boy who did not know a trick or two. Mind, I do not commend it, but as it is "boy nater," I accept it as a fact, as long as we have boys. Well, now, about fire. I have traveled much among Indians, and they have no matches. Fire is of the greatest importance to them, and when once extinguished, is only renewed with difficulty. I have known Indians to travel hundreds of miles, one or two of their party carrying a lighted and charred Cotton-wood or Poplar stick. The coal on the end of such a braod remains alight a surprising length of time, and when the fire shows signs of giving out, the holders of two sticks put the ends together and blow and coax until the existence of fire is fully established. But I have not told you how those Indians get fire, where none is to be found to start from. Before I describe the process, I will state here, and not in a very precise way, but as something to be remembered, that all motion produces heat, and all heat may be made to produce motion. I put that as what is called an "abstract proposition," but it is simple, and I wish you to remember it. Now to come back to our Indians. How are they, who have no matches, to get a fire? Can you conceive of any other way than that of friction? They cannot, and friction it is of the most severe kind. You read in the books that Indians get a fire by rubbing two pieces of wood together. As a statement, this is true, but the kind of wood and the way in which it is arranged are not mentioned. If you take two common strips of wood and rub one upon another, they will become very hot—hot enough perhaps to light a match, but this is not making a fire without outside help. Let me tell you how I have seen Indians who had no matches get a fire by friction. The Indian uses a piece of very hard wood and one of very soft wood. The hard-wood strip is about two feet long, and two inches, more or less, square. The engraving represents its shape. In what may be called its upper surface there are concavities or hollowed-out spots which by a hole communicate with what is represented in the engraving as the front side. Sand, or any powder, if dropped into these hollows would run out of the hole at the side. The Indian has a stick of this kind long enough for him to hold it conveniently by placing his knees upon it. He then has a very soft stick, usually the flower stem of a Yucca, which he twirls rapidly between his hands, the end of the soft stick resting in one of the cavities of the hard stick upon which his knees rest. The soft stick is revolved with great

rapidity by the rubbing of the hands: heat is generated, soon the end of the stick becomes charred, and the charcoal being rubbed off by the motion, drops through the channel in the hard stick that we have mentioned, and a little pile of it is accumulated in front, and is caught upon a leaf. The Indian then redoubles his efforts at twirling the soft stick, and if he spins hard enough, at length a spark drops out upon the little charcoal heap, sets the whole on fire, and he has only to secure and nurse this fire. It seems very easy to tell this, but I have seen many a stout Indian get into a great perspiration over the operation, and have tried it again and again, with the best of savage instruction, with the result of getting a splendid sweat, but never a spark. This is, so far as I know, the most primitive way of getting a fire. We will talk about the other methods at another time.

A Horticultural Doll.

Mr. C. B. Moore, of Brown Co. Ohio, sends an item for the Boys and Girls. He was much amused at seeing several little girls making an odd kind of doll. The starting-point was a hollyhock, which, turned upside down, furnished in its colored part a very nice skirt, and the green part (calyx) a nicely fitting waist. Then for a head what could be better than a grape? But the thing must have arms, so a straw was stuck in, and that the lady might be in full dress, she was furnished with a belt of the skin of a rhubarb stem; the feet are made of beans. We show this as a capital specimen of child's ingenuity. There is more fun in making such things as these than there is in playing with costly toys. We believe in home-made toys, and now what boy or girl has found amusement in some such simple thing as this, and is ready to tell it to all the others of our large family?



New Puzzles to be Answered.

No. 356. *Conundrum*.—Mixed relationships. The questions of relationship given in July last called out an unusual number of answers, and similar questions, one of which we give. The following is sent by G. W. Clemmer, Parksville, Tenn. Two women saw two men coming towards the house. One woman said to the other, here come our fathers, our children's fathers, our children's grandfathers, and our own husbands. What was the relationship?

Enigmas, Riddles, Metagrams, etc.—Quite a number have been sent us, but we do not publish any unless the answer is given, as it is necessary for us to judge of their value before putting them in print. "J. C. W.," "Metagram," and others, will see why their contributions do not appear; besides we do not care for a contribution from any one on any subject who does not wish to sign his or her name.



No. 357. *Picture Conundrum*.—This picture shows an artist at work and a boy who has been caught at stealing apples. In what respect are they alike?



No. 358. *Illustrated Rebus*.—A very easy one, but it gives good advice to the young people who can read it.



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LITTLE MISCHIEF.—DRAWN BY EDWIN FORBES FROM A SKETCH BY THOMAS WORTH.—Engraved for the American Agriculturist.

So, Miss Mischief, our artist has caught you! You went out to the barn where you thought no one would see you, to play your mischievous pranks and tease the old horse. The artist did not tell us where he made the sketch, and we hope that none of our boys and girls know where he might have made it. It may for a while seem to be fun to tease an animal which is so confined that he cannot resent it, but is it right? Is it not unkind to take advantage of the horse's helpless condition and annoy him as "Little Mischief" is doing? Look out, young lady! Horses have good memories and know who treat them kindly or otherwise, almost as well as some human beings do. Old Jack, if he is the sensible horse we take him to be, will some day pay you off for plugging him. If by and by he should take a fancy to your pretty straw hat and spoil it with a nip, when you are not thinking of any danger, you need not be surprised. It is much better to be good friends with even the animals upon the farm than to earn their ill will. There are many ways in which boys and girls can have plenty of fun without disturbing the comfort of the poor helpless animals.

A few days ago a dog belonging to Rev. C. A. Downs, of Lebanon, N. H., had a slight "onpleasantness" with a woodchuck, and the latter seized him by the check and

refused to relinquish his hold. With remarkable presence of mind, his dogship repaired to a brook near by, and sousing the woodchuck under, held him there until he was drowned.

The pastor of a popular church, one Sabbath evening, at the Sabbath School concert, said: "Boys, when I heard your beautiful songs to-night I had to work hard to keep my feet still; what do you suppose is the trouble with them?" "Chilblains, sir," said a little six-year-old boy, which, notwithstanding the solemnity of the occasion, set the whole audience in a roar.

At a young ladies' seminary, recently, during an examination in history, one of the most promising pupils was interrogated: "Mary, did Martin Luther die a natural death?" "No," was the reply, "he was excommunicated by a bull."

Answers to Problems and Puzzles.

No. 347. "That same old Coon" needs only to be turned upside down to make it show its face. Conundrum, No. 348.—The beggar was a woman. No. 349.—The picture was that of the man's own son. Rebus No.

350.—Abbreviate (A breve E (which should have been D) S. Rebus No. 351.—Be above fawning upon persons above you, or oppressing those beneath you. (See above fawn in G upon persons above ewe, OR O pressing Those beneath ewe). Answers have been sent by a large number. Owing to some change in our editorial arrangements it may happen that some who have sent answers have failed to receive credit for them. We trust that this accident will not prevent them from trying again. Where correct in one case and wrong in another, we designate the right answer by the number. C. Williams, D. W. Leitzell, L. M. Wright, W. Pulsifer (349), S. P. Heilman, A. D. Riker (347), G. McBride, G. W. Quinby, Jr. (348), Alice Bradstreet, J. M. Dorr (349), J. G. Hertzler (349), C. B. Villet, Alice Warren, C. B. Overinger, L. E. Whitney, G. W. Clemmer, Jonas Bare, W. T. Jolly (348), J. A. Sanford, Bella Allen, W. C. Ellis, Mary M. Skidmore, LeRoy Shepard, Annie S. Budd, Lucy W. Dresser (347), "Ann Easyone," L. H. Reynolds, Willie W. Darrah (request attended to), "Ruralist," W. B. Haines, Ida E. Miller (348), H. Tudor, Frank P. Bankstone, W. W. Maryatt, J. C. Morrow, C. S. Rush, W. J. Burns, Julia A. Sanborn, A. D. Newton (349), F. S. Ingalls, Emma F. Gilchrist, Charlie D. Beck, J. Leide, C. W. Adamson, H. B. Wade (347), Jas. Carson, Henry Fletcher, Walter Roberts.

OUR YOUNG FOLKS MAGAZINE.

"THE BEST JUVENILE MAGAZINE EVER PUBLISHED IN ANY LAND OR LANGUAGE"

From the September number we make the following extract from Mr. ALDRICH's popular Story—"The Story of a Bad Boy."

HOW WE ASTONISHED THE RIVERMOUTHIANs.

Among the few changes that have taken place in Rivermouth during the past twenty years there is one which I regret. I lament the removal of all those varnished iron cannon which used to do duty as posts at the corners of streets leading from the river. They were quaintly ornamental, each set upon end with a solid shot soldered into its mouth, and gave to that part of the town a picturesqueness very poorly toned for by the conventional wooden stakes that have deposited them.

These guns ("old sogers" the boys called them) had their story, like everything else in Rivermouth. When that everlasting last war—the war of 1812, I mean—came to an end, all the brigs, schooners, and barks, fitted out at this port as privateers were as eager to get rid of their useless twelve-pounders and swivels as they had previously been to obtain them. Many of the pieces had cost large sums, and now they were little better than so much crude iron,—not so good, in fact, for they were clumsy things to break up and melt over. The government did not want them; private citizens did not want them; they were a drug in the market.

But there was one man, ridiculous beyond his generation, who got it into his head that a fortune was to be made out of these same guns. To buy them all, to hold on to them until war was declared again (as he had no doubt it would be in a few months), and then sell out at fabulous prices,—this was the daring idea that added the pate of Silas Trefethen, "Dealer in E. & W. I. Goods and Groceries," as the faded sign over his shop-door informed the public.

At Trefethen's death his unique collection came under the auctioneer's hammer. Some of the larger guns were sold to the town, and planted at the corners of divers streets; others went off to the iron-foundry; the balance, numbering twelve, were dumped down on a deserted wharf at the foot of Anchor Lane, where, summer after summer, they rested at their ease in the grass and fungi, pelted in autumn by the rain, and annually buried by the winter snow. It is with these twelve guns that our story has to deal.

The wharf where they reposed was shut off from the street by a high fence,—a silent, dreary old wharf, covered with strange weeds and mosses. On account of its seclusion and the good fishing it afforded, it was much frequented by us boys.

Jack Harris, Charley Marden, Harry Blake, and myself, were fishing off the grass-grown wharf one afternoon, when a thought flashed upon me like an inspiration.

"I say, boys!" I cried, hauling in my line and over hand, "I've got something!"

"What does it pull like, youngster?" asked Harris, looking down at the taut line and expecting to see a big perch at last.

"O, nothing in the fish way," I returned, laughing; "it's about the old guns."

"What about them?"

"I was thinking what jolly fun it would be to set one of the old sogers on his legs and serve him out a ration of gunpowder."

"Up came the three lines in a jiffy. An enterprise better suited to the disposition of my companions could not have been proposed.

In a short time we had one of the smaller cannon over on its back and were busy scraping the green rust from the touch-hole. The mould had spiked the gun so effectually, that for a while we fancied we should have to give up our attempt to resuscitate the old soger.

"A long gimlet would clear it out," said Charley Marden, "if we only had one."

I looked to see if Sailor Ben's flag was flying at the cabin door, for he always took in the colors when he went off fishing.

"When you want to know if the Admiral's abroad, jest cast an eye to the buntin', my beauties," says Sailor Ben.

Sometimes in a jocular mood he called himself the Admiral, and I am sure he deserved to be one. The Admiral's flag was flying, and I soon procured a gimlet from his carefully kept tool-chest.

Before long we had the gun in working order. A newspaper lashed to the end of a lath served as a swab to dust out the bore. Jack Harris blew through the touch-hole and pronounced all clear.

Our first intention was to load and fire a single gun. How feeble and insignificant was such a plan compared to that which now sent the light dancing into our eyes!

"What could we have been thinking of?" cried Jack Harris. "We'll give 'em a broadside, to be sure, if we die for it!"

We turned to with a will, and before nightfall had nearly half the battery overhauled and ready for service. To keep the artillery dry we stuffed wads of loose hemp into the muzzles, and fitted wooden pegs to the touch-holes.

At recess the next noon the Centipedes met in a corner of the school-yard to talk over the proposed lark. The original projectors, though they would have liked to keep the thing secret, were obliged to make a club matter of it, inasmuch as funds were required for ammunition. There had been no recent drain on the treasury, and the society could well afford to spend a few dollars in so notable an undertaking.

It was unanimously agreed that the plan should be carried out in the handsomest manner, and a subscription to that end was taken on the spot. Several of the Centipedes had not a cent, excepting the one strung around their necks; others, however, were richer. I chanced to have a dollar, and it went into the cap quicker than lightning. When the club, in view of my munificence, voted to name the guns Bailey's Battery I was prouder than I have ever been since over anything.

The money thus raised, added to that already in the treasury, amounted to nine dollars,—a fortune in those days; but not more than we had use for. This sum was divided into twelve parts, for it would not do for one boy to buy all the powder, nor even for us all to make our purchases at the same place. That would excite suspicion at any time, particularly at a period so remote from the Fourth of July.

There were only three stores in town licensed to sell powder; that gave each store four customers. Not to run the slightest risk of remark, one boy bought his powder on Monday, the next boy on Tuesday, and so on until the requisite quantity was in our possession. This we put into a keg and carefully hid in a dry spot on the wharf.

Who knew anything about fuses? Who could arrange it so the guns would go off one after the other, with an interval of a minute or so between?

Theoretically we knew that a minute-fuse lasted a minute; double the quantity, two minutes; but practically we were at a stand-still. There was but one person who could help us in this extremity,—Sailor Ben. To me was assigned the duty of obtaining what infor-

mation I could from the ex-gunner, it being left to my discretion whether or not to intrust him with our secret.

So one evening I dropped into the cabin and artfully turned the conversation to fuses in general, and then to particular fuses, but without getting much out of the old boy, who was busy making a twine hammock. Finally I was forced to divulge the whole plot.

The Admiral had a sailor's love for a joke, and entered at once and heartily into our scheme. He volunteered to prepare the fuses himself, and I left the labor in his hands, having bound him by several extraordinary oaths—such as "Hope-I-may-die" and "Sliver-my-timbers"—not to betray us, come what would.

This was Monday evening. On Wednesday the fuses were ready. That night we were to unuzzle Bailey's Battery.

Directly after twilight set in Phil Adams stole down to the wharf and fixed the fuses to the guns, laying a train of powder from the principal fuse to the fence, through a chink of which I was to drop the match at midnight.

At ten o'clock Rivermouth goes to bed.

At eleven o'clock Rivermouth is as quiet as a country churchyard.

At twelve o'clock there is nothing left with which to compare the stillness that broods over the little seaport.

In the midst of this stillness I arose and glided out of the house like a phantom bent on an evil errand; like a phantom I flitted through the silent street, hardly drawing breath until I knelt down beside the fence at the appointed place.

Pausing a moment for my heart to stop thumping, I lighted the match and shielded it with both hands until it was well under way, and then dropped the blazing splinter on the slender thread of gunpowder.

A noiseless flash instantly followed, and all was dark again. I peeped through the crevice in the fence, and saw the main fuse splitting out sparks like a conjurer. Assured that the train had not failed, I took to my heels, fearful lest the fuse might burn more rapidly than we calculated, and cause an explosion before I could get home. This, luckily, did not happen. There's a special Providence that watches over idiots, drunken men, and boys.

I dodged the ceremony of undressing by plunging into bed, jacket, boots and all. I am not sure I took off my cap; but I know that I had hardly pulled the coverlid over me, when "Boom!" sounded the first gun of Bailey's Battery.

I lay as still as a mouse. In less than two minutes there was another burst of thunder, and then another. The third gun was a tremendous fellow and fairly shook the house.

The town was waking up. Windows were thrown open here and there, and people called to each other across the streets asking what that firing was for.

"Boom!" went gun number four.

I sprang out of bed and tore off my jacket, for I heard the Captain feeling his way along the wall to my chamber. I was half undressed by the time he found the knob of the door.

"I say, sir," I cried, "do you hear those guns?"

"Not being deaf, I do," said the Captain, a little tartly,—any reflection on his hearing always nettled him; "but what on earth they are for, I can't conceive. You had better get up and dress yourself."

"I'm nearly dressed, sir."

"Boom! Boom!"—two of the guns had gone off together.

The door of Miss Abigail's bedroom opened hastily, and that pink of maidenly propriety stepped out into the hall in her nightgown,—the only indecorous thing I ever knew her to do. She held a lighted candle in her hand and looked like a very aged Lady Macbeth.

"O Dan'el, this is dreadful! What do you suppose it means?"

"I really can't suppose," said the Captain, rubbing his ear. "but I guess it's over now."

"Boom!" said Bailey's Battery.

Rivermouth was wide awake now, and half the male population were in the streets, running different ways, for the firing seemed to proceed from opposite points of the town. Everybody laylaid everybody else with questions; but as no one knew what was the occasion of the tumult, people who were not usually nervous began to be oppressed by the mystery.

Some thought the town was being bombarded; some thought the world was coming to an end, as the pious and ingenious Mr. Miller had predicted it would; but those who could not form any theory whatever were the most perplexed.

In the meanwhile Bailey's Battery bellowed away at regular intervals. The greatest confusion reigned everywhere by this time. People with lanterns rushed hither and thither. The town-watch had turned out to a man, and marched off, in admirable order in the wrong direction. Discovering their mistake, they retraced their steps, and got down to the wharf just as the last cannon belched forth its lightning.

The cause of the racket soon transpired. A suspicion that they had been sold, gradually dawned on the Rivermouthians. Many were exceedingly indignant, and declared that no penalty was severe enough for those concerned in such a prank; others—and these were the very people who had been terrified nearly out of their wits—had the assurance to laugh, saying they knew all along it was only a trick.

The town-watch boldly took possession of the ground, and the crowd began to disperse. Knots of gossips lingered here and there near the place, indulging in vain surmises as to who the invisible gunners could be.

There was no more noise that night, but many a timid person lay awake expecting a renewal of the mysterious cannonading. The Oldest Inhabitant refused to go to bed on any terms, but persisted in sitting up in a rocking-chair, with his hat and mittens on, until daybreak.

I thought I should never get to sleep. The moment I drifted off in a doze I fell to laughing and woke myself up. But towards morning slumber overtook me and I had a series of disagreeable dreams, in one of which I was waded upon by the ghost of Silas Trefethen with an exorbitant bill for the use of his guns. In another, I was dragged before a court-martial and sentenced by Sailor Ben, in a frizzled wig, and three-cornered cocked hat, to be shot to death by Bailey's Battery,—a sentence which Sailor Ben was about to execute with his own hand, when I suddenly opened my eyes and found the sunrise lying pleasantly across my face. I tell you I was glad!

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Westchester Black-Cap Raspberry.



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The earliest of all the Black-Caps, more productive, producing on an average from five to eight quarts per stool, perfectly hardy, and is the best flavored berry yet discovered, having a rich, sprightly flavor, exceedingly pleasant, berries large, and of a handsome jet-black color, with no bloom.

Report of Committee Farmers' Club.

The Westchester Black-Cap Raspberry is a chance Seedling, which originated eight years since in the yard of Levi J. Mabe, of Tarrytown, N. Y. He has cultivated the plant since that time for the better opportunity of testing and fully demonstrating its value. It is one of the strongest growing varieties that we have as yet seen, having ample opportunity of contrasting it side by side with the Doolittle, in various situations and on different soils. We found it exceeded the Doolittle in every respect; came that we measured were from fifteen to eighteen feet in length, and bearing one hundred and fifty trusses of berries. These came about certainly produce two quarts of fruit at a picking. Another bush we saw, grown entirely from one stem, was so productive, that although three quarts of ripe fruit were picked from it, nearly eight more were just ripening. We were perfectly satisfied that no extra care or cultivation had been given, the plants being grown close to a picket fence, and the canes never having been pruned, they were all of the same size and productiveness. In comparison with the Doolittle it is more productive, and one week earlier, the berries are as large, if not larger, than the Doolittle, and in flavor far superior; flesh firm, seeds small, and, on this account, making it desirable for preserving. It ripens more uniformly, and produces less imperfect fruit. There is no doubt about its being a distinct variety, and, in our opinion, a desirable acquisition to our list of small fruits, either for market or family use. THOMAS CAVANACH, Chairman Committee from Farmers' Club.

Report of Committee Fruit-Growers' Club.

The Committee appointed by the Fruit-Growers' Club to examine the merits of the Westchester Seedling Black-Cap Raspberry, would report that a visit was made on Saturday, July 3d, to the grounds of the proprietor, L. J. Mabe, Tarrytown, N. Y., where a careful investigation was made of the excellencies claimed for it, and a fair comparison with other varieties. They found it to be exceedingly vigorous, ripening one week earlier than the Doolittle, fully as productive, a much better flavor, berries ripening more uniformly together, and averaging as large, or larger; seeds smaller, and perfectly hardy. We are satisfied that it is a new variety, has received no extra care or culture, and we think will prove a desirable acquisition to our present list of varieties. HENRY T. WILLIAMS, Chairman.

PRICES OF PLANTS.—Per half dozen, by mail, \$3; per dozen, by mail, \$5; per hundred, \$30.

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We offer an extra fine stock of this celebrated Currant at the following rates: 1-year-old, \$2 per dozen; \$20 per 100; \$75 per 1,000. 2-year-old, \$3 per dozen; \$25 per 100; \$100 per 1,000. Sample sent by mail on receipt of 50c. Sent free circular. EDWARD BURGESS, Pongokeepsie, N. Y.

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Messrs. HASSBROCK & BUSHNELL, Gentlemen: The Eumelan sent me by Dr. Grant is now on its second year's growth, making a good show of fruit, and a masterly growth of wood. I must say, thus far, I have never cared for a vine which more fully "fills the bill." The characteristics generally ascribed to it seem to be fully developed here, and after passing through the severest trial of winter the vine has ever sustained in this locality, it now manifests more vigor than any variety I have ever handled. Very respectfully, WM. BROOKS.

NORTH EAST, Pa., Aug. 5th, 1869.

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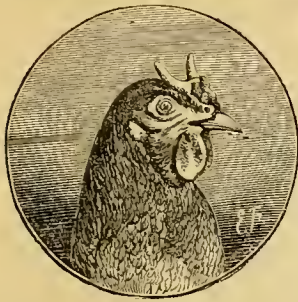
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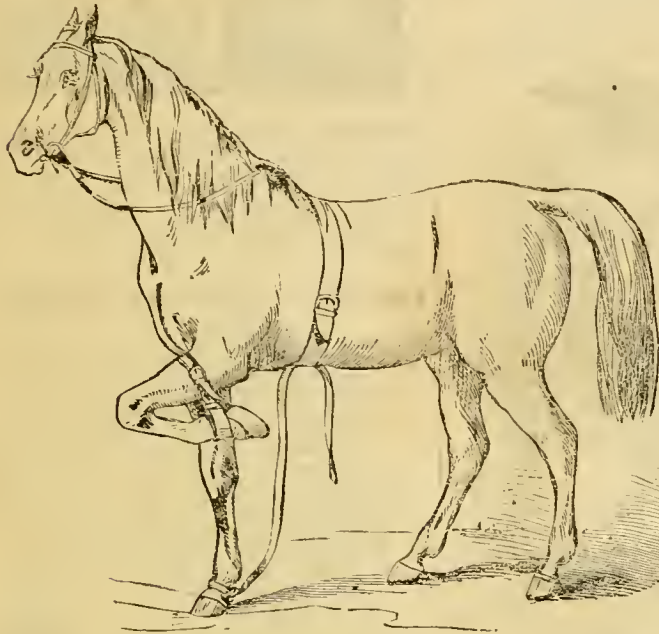
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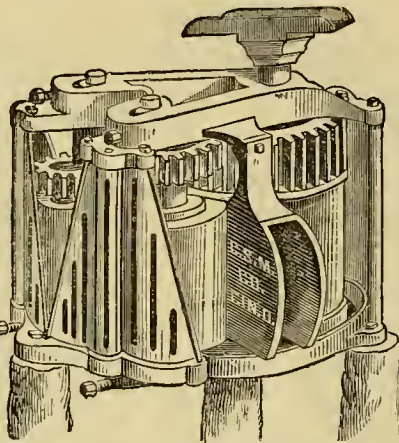
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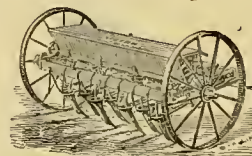
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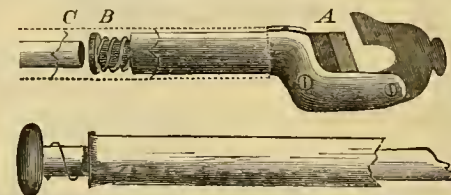


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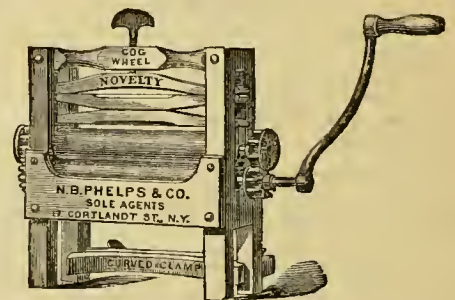
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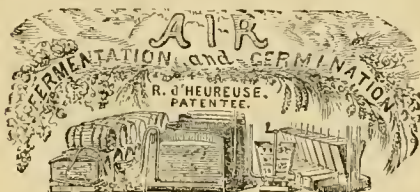
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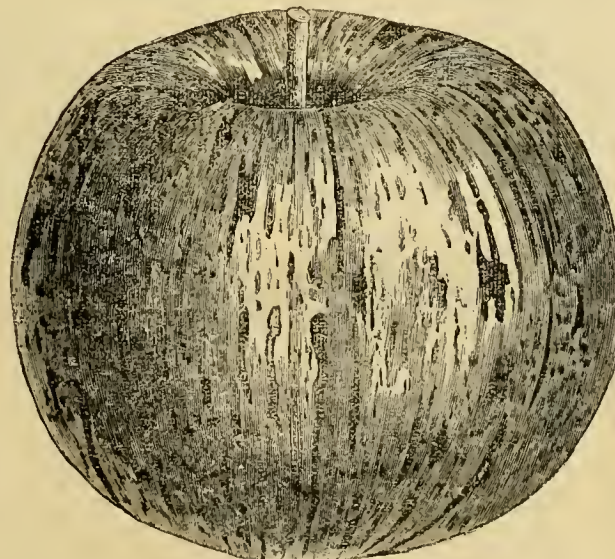
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Table listing various books for sale, including 'Allen's (L. F.) Rural Architecture', 'Allen's (R. L.) American Farm Book', 'Am. Agricultural Annual', 'Am. Horticultural Annual', 'American Bird Fancier', 'American Rose Culturist', 'American Weeds and Useful Plants', 'Bemert's Rabbit Fancier', 'Bommer's Method of Making Manures', 'Boussingault's Rural Economy', 'Breck's New Book of Flowers', 'Buist's Flower Garden Directory', 'Buist's Family Kitchen Gardener', 'Chorlton's Grape-Grower's Guide', 'Cobbett's American Gardener', 'Cole's (S. W.) American Fruit Book', 'Cole's Veterinarian', 'Copeland's Country Life', 'Dadd's (Geo. H.) Modern Horse Doctor', 'Dadd's American Cattle Doctor', 'Dana's Muck Manual', 'Darwin's Variation of Animals and Plants', 'De Voe's Market Assistant', 'Downing's Landscape Gardening', 'Eastwood on Cranberry', 'Elliott's Western Fruit Grower's Guide', 'Field's (Thomas W.) Pear Culture', 'Flax Culture', 'French's Farm Drainage', 'Fuller's Grape Culturist', 'Fuller's Small Fruit Culturist', 'Fuller's Strawberry Culturist', 'Gregory on Squashes', 'Guenon on Milch Cows', 'Harris' Insects Injurious to Vegetation', 'Henderson's Gardening for Profit'.

Table listing various books for sale, including 'Henderson's Practical Floriculture', 'Herbert's Hints to Horsekeepers', 'Hoopes' Book of Evergreens', 'Hooper's Dog and Gun', 'Hop Culture', 'Hunter and Trapper', 'Jaques' Manual of the House', 'Johnson's How Crops Grow', 'Johnson's Peat and Its Uses', 'Johnston's Agricultural Chemistry', 'Johnston's Elements of Agricultural Chemistry', 'Leuchar's How to Build Hot-houses', 'Lyman's Cotton Culture', 'Miles on the Horse's Foot', 'Mohr on the Grape Vine', 'My Vineyard at Lakeview', 'Norton's Scientific Agriculture', 'Onion Culture', 'Our Farm of Four Acres', 'Pardee on Strawberry Culture', 'Parsons on the Rose', 'Pedder's Land Measurer', 'Percheron Horse', 'Quinby's Mysteries of Bee Keeping', 'Randall's Sheep Husbandry', 'Randall's Fine Wool Sheep Husbandry', 'Richardson on the Dog', 'Rivers' Miniature Fruit Garden', 'Rural Church Architecture', 'Saunders' Domestic Poultry', 'Schenck's Gardener's Text Book', 'Skillful Housewife', 'Stewart's (John) Stable Book', 'Thomson's Farm Implements and Machinery', 'Thompson's Food of Animals', 'Tim Bunker Papers', 'Tobacco Culture', 'Turner's Cotton Planter's Manual', 'Warder's American Pomology', 'Warder's Hedges and Evergreens', 'Waring's Draught for Profit and Pleasure', 'Waring's Elements of Agriculture', 'Waring's Earth Closets', 'Wheeler's Rural Homes', 'Wheeler's Homes for the People', 'White's Gardening for the South', 'Whitcomb's Cottages and Farm Houses', 'Woodward's Suburban and Country Houses', 'Woodward's Country Homes', 'Wright's Practical Poultry Keeper', 'Yonatt and Spooner on the Horse', 'Yonatt and Martin on Cattle', 'Yonatt on the Hog', 'Yonatt on Sheep'.

Woodward's National Architect, New York. O. J. & Co. keep in Stock the following Books:

Table listing various books for sale, including 'Architecture. By Cummings & Miller', 'Modern American Architecture. By Cummings & Miller', 'Principles and Practice of, By Loring & Jenney', 'Review and American Builder's Journal. By S. Sloan. In Nos. each', 'Allen's (L. F.) American Cattle', 'Art of Saw Filing. (Holly)', 'Bailey's Ownwards of the United States', 'Bancroft's Poultry's Companion', 'Bridgeman's Young Gardener's Assistant', 'Burr's Vegetables of America', 'Carpenter's and Joiner's Hand Book. (Holly)', 'Carpenter and Joiner. (R. Riddell)', 'Chemistry of the Farm, (Nichols)', 'Crack Shot. (Barber)', 'Dead Shot; or Sportsman's Complete Guide', 'Downing's Cottage Residences', 'Downing's Fruits and Fruit Trees of America', 'Downing's Rural Essays', 'Du Breuil's Vineyard Culture, (Dr. Warder)', 'Farm Talk, (Bracekett)', 'Farming for Boys', 'Fishing in American Waters, (Scott)', 'Flagg's European Vineyards', 'Flint (Charles L.) on Grasses', 'Flint's Milch Cows and Dairy Farming', 'Frank Forester's Field Sports, Svo., 2 vols.', 'Frank Forester's Fish and Fishing, Svo., 100 ones', 'Frank Forester's Manual for Young Sportsmen, Svo.', 'Fuller's Forest Tree Culturist', 'Geyelin's Poultry Breeding', 'Gray's How Plants Grow', 'Gray's Manual of Botany and Lessons in one Vol.', 'Gray's School and Field Book of Botany', 'Gun, Rod and Saddle', 'Harzaty's Grape Culture and Wine Making', 'Hatfield's American House Carpenter', 'Horse Training Made Easy (Jennings)', 'Husmann's Grapes & Wine', 'Jennings on Cattle', 'Jennings on Sheep, Swine, and Poultry', 'Jennings on the Horse and his Diseases', 'Kemp's Landscape Gardening', 'Laatzstroth on the Honey Bee', 'Mayhew's Illustrated Horse Doctor', 'Mayhew's Illustrated Horse Management', 'Mayhew's Practical Book-keeping for Farmers', 'Plans for do. do.', 'McMahon's American Gardener', 'Mechanic's Companion, (Nicholson)', 'Morrell's American Shepherd', 'Mrs. Hale's New Cook Book', 'My Farm of Edgewood', 'Norris' Fish Culture', 'Packard's A Guide to the Study of Insects, 8 parts, each', 'Parkman's Book of Roses', 'Quincy, (Hon. Josiah) on Soiling Cattle', 'Rand's Bulls', 'Rand's Flax for the Farmer and Gardener', 'Reisig's Cultiva of Rural Affairs. Bound, 5 vols., each', 'Roosevelt's Five Acres too Much', 'Rural Studies', 'Scribner's Ready Reckoner and Log Book', 'Silloway's Modern Carpentry', 'Simpson's Horse Illustration', 'Strong's Cultivation of the Grape', 'Streitender's Poultry Book', 'Ten Acres Enough', 'The Dog; By Dinks, Mayhew, and Hutchinson', 'The Horse, (Stonehenge). Eng. edition, Svo., 623 pages.', 'The Mule, (Hilly)', 'Thomas' Fruit Culturist', 'Trappes' Guide', 'Trappes' Register of Rural Affairs', 'Vaux's Villas and Cottages', 'Watson's American Home Garden', 'Woodward's Graperies, etc.', 'Youman's Household Science'.

AMERICAN AGRICULTURIST

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Office, 245 BROADWAY.

ESTABLISHED IN 1842.

Published also in German at \$1.50 a Year.

{ \$1.50 PER ANNUM, IN ADVANCE.
SINGLE NUMBER, 15 CENTS.
4 Copies for \$5; 10 for \$12; 20 or more, \$1 each.

Entered according to Act of Congress in September, 1869, by ORANGE JUDD & Co., in the Clerk's Office of the District Court of the United States for the Southern District of New-York.

VOLUME XXVIII.—No. 10.

NEW YORK, OCTOBER, 1869.

NEW SERIES—No. 273.



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COTSWOLDS—THE "MAPLE-SHADE" FLOCK.—DRAWN BY EDWIN FORBES, FROM PHOTOGRAPHS

Discuss the merits of different long-wool breeds as we may, one thing is certain,—American sheep-raisers have, at the present time, little choice. If they wish to get long-wool sheep of pure blood and great excellence for breeding purposes, they must take Cotswolds, for, of others, there are next to none in the country. These are portraits of part of the flock of John D. Wing, of Maple-shade Farm, Washington, Dutchess Co., N. Y. They represent the sheep, as nearly as possible, as photographed a few weeks after shearing, the wool having grown

out just enough to obliterate the shear marks. This time was selected as best for showing their massive carcasses; and yet it was hardly a fair time to photograph breeding ewes, the lambs having been just taken away. This might, indeed, be inferred from the distended udders of the two ewes walking towards the flock. This flock is equal or superior to any in the country, and was selected from those of the most famous breeders of England. "Champion of England," the ram in the foreground, is a two-year-old, imported last year. His weight is about 350

pounds, and his fleece weighed 18 pounds; next him stands an old ewe, "No. 6;" next, at the left, a noble ewe, "No. 72," one of the finest sheep in the flock; she has the body of a short-horn and the style of a race-horse. The ewes on the bank, with backs towards us, are "No. 27," with the head down, and "No. 70." Maple-shade ewes shear from 11 to 16 pounds each, unwashed. This year the clip sold for 45 cents per pound, in the dirt, with no deductions. Cotswolds are hardy, prolific, and good mothers; the grades show strongly the Cotswold blood.

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Take Notice.

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Every New Subscriber to the American Agriculturist for 1870, whose subscription comes to hand during October, will be presented with the paper the rest of this year without charge, if the name be marked new when sent in. Take Notice, that this offer extends to All New Subscribers, whether coming singly, or in Premium Clubs, or otherwise. (This will help those who now begin to make up lists for Premiums, for they can offer to each new subscriber a bonus of two months free and still count these names in Premium Lists.)

AMERICAN AGRICULTURIST.

NEW YORK, OCTOBER, 1869.

What a fine thing it would be if every farmer in the United States were able to attend a good agricultural fair and cattle show every year! There are few counties in the older States where a Society might not be maintained and good paying fairs held, which would not only afford agreeable holidays, but be of great benefit to the agriculture of the district. Any effort to combine the sale of stock or produce with the shows, and to make this a marked feature, has utterly failed wherever it has been attempted. It seems essentially foreign to the genius of our people. However, sales of stock and of seed grain, potatoes, etc., are made to a considerable extent, and it seems as if, were we to let this sort of thing work awhile, the problem would be solved in an American way, and we should finally see these meetings not only all that they are now, and more too, but regular marts for the sale of certain classes of live-stock, implements, plants, seeds, etc. A few stirring men will start a Farmers' Club or an Agricultural Society in almost any community and keep it up with unflagging interest. If such a thing is undertaken, be sure to get active men of both or all political parties to unite in it, and, beyond this, never think of politics for a moment in connection with the Society. Too many once useful organizations are now dead or in a state of suspended animation, simply because they were made use of by shrewd politicians as stepping-stones to office in the State.

As we approach the winter, the labor of different sections varies essentially, and our hints about work must be taken with reasonable allowances for differences of latitude.

Hints About Work.

Farm Buildings.—Look to the foundations, and repair where necessary before cold weather; bank up the earth to prevent water settling near or working through them. See that good channels exist to carry surface water away from (not out of) barnyards, and away from all buildings. See that no sills rest upon the ground, and that no manure or litter has accumulated under the floors or sills.

Eave-troughs should be put upon every roof from which the water might run into the barn-yard; carry all rain-water into cisterns or well away.

The water supply for the stock-yard is very important. Bring it, if possible, in pipes (lead-lined block tin, which is best, wood or iron); otherwise, if a well and pump cannot be conveniently located in the barn or yard, consider the feasibility of storing water in underground cisterns. These may be made at this season of the year very well. They are of simple construction, all that is necessary being to dig a pit of proper size—round, flat, or bowl-shaped, on the bottom—and to plaster it on the bottom and sides with the best cement and sand, working round and round, so as to have the narrow strip setting all the time, yet not hard, before the next course is applied. Such a cistern may be arched over by laying a thick cement dome over a rough structure of boards, a man-hole being left in the apex; or it may be covered with planks and earth. In either case it must be below frost. Water near a barn is a great convenience.

Ice-houses may be built entirely above ground, and of cheap, rough materials, and will answer an excellent purpose, provided only the essential conditions are observed. There must be no free circulation of air beneath nor against the ice. No water may stand in contact with the ice. The channel through which water flows off should not admit a draft of air. The ice must lie upon a mass of some non-conducting material—straw, wheat chaff, etc. The sides should be of wood, double, and packed with some non-conductor, as dry sawdust, shavings, spent tan bark, etc. There should be some free communication with the air through the roof above the ice (not a draft). If in small masses, say

12x12 feet square, the mass should be surrounded and also covered with straw, chaff, or sawdust.

Henneries for securing eggs in winter may have their floors three feet below the surface of the ground, well cemented, to prevent water coming in. The earth coming out of the pit, if banked up against the walls, will make them very warm, while green-house sashes will admit light and the heat of the sun to such a degree that fowls in such quarters, well fed, will usually lay all winter. The whole structure should not be over 5 feet high, in front, from the floor, and 8 feet at the rear. Fowls may also be accommodated in other warm, light quarters with the same results. Be sure to ventilate.

Swines.—Push forward such as are to be marketed soon with the most fattening food—old corn meal, if you have it, and linseed-meal, with occasional or regular feeds of pumpkins and turnips; keep them in the pasture by day if the grass is good.

Fattening Sheep require similar feeding. Give them about as much oil-cake as they will eat, but be careful not to cloy them with too much corn meal, corn, or other grain; for if they get off their feed they pick up slowly. Give sheep some range when first taken up, but where they will be quiet.

Swine should have the soft corn as fast as it is husked, and be fed with cooked feed, corn soaked and boiled being nearly as good as cooked meal, and saving miller's tolls. Feeding corn on the ear is very wasteful. It is a mistake to keep breeding sows very thin before they farrow. Feed with roots rather than grain, keep them in good flesh, and their bowels in good order. A few handfuls of powdered charcoal once or twice a week is of marked benefit.

Breeding Sheep.—March lambs are "spoken for" in October, and in our climate this is early enough for the majority of early lambs to be weaned; earlier ones require a good deal of care, and without it never pay so well. The choice of rams for early lambs lies between Southdowns and Cotswolds. The former give the better, the latter the larger lambs and often those which bring the highest price. In point of quality, Cotswold grade lambs are so good that few can tell the difference.

Fatten Poultry on scalded corn meal, keeping them yarded, and feeding them four times a day. Give wheat screenings or whole corn for the night, and soft feed by day. Each time give all they will eat, and no more, but keep fresh grass sods and pork scrap cake before them to pick at.

Potatoes must be dug at once. This is now the most pressing farm work, if the corn is cut up, and until this crop is secure undertake nothing else.

Roots may stand as long as they grow well, but harvest them as the advancing season indicates the freezing of the ground. Carrots and beets bear a little freezing, turnips still more, and parsnips stand the winter and may be dug in the spring.

Corn.—When the grain is cured, that is, when the kernels are hard, the ears stiff and solid, husk in the field, binding the stalks in small bundles to cure for winter fodder. If you would save the husks, pick the ears off and bring them to the barn to be husked at odd spells, or break off the ears, saving the husks in the field. Look out for the new corn-huskers at the fairs. They take the ear from the stalk and husk it as fast as the stalks can be fed into a sort of cutting-box arrangement.

Sorghum.—Secure before hurt by hard frosts. Slight frosts are a warning and stop the growth. If the stalks are stripped, and bound in convenient bundles with two bands, they will keep some time, but ought to be worked up without needless delay.

Winter Grain.—Few crops respond more promptly to a thorough preparation of the soil than winter grain and especially wheat. Late sown wheat especially should have a fine rich mellow seed bed. Do not risk it on heavy land, unless it has time enough to cover the ground well before winter. The first of October is late for wheat, though just right for rye, which indeed may be sown any time during the month; but north of latitude 42° late sowing is usually attended by too much risk. If grain does not start well, and owing to cold weather fails to tiller and cover the ground, a dress-

ing of some good fertilizer of ashes, or of fine, rich compost, will tell at once as well as at harvesting.

Soiling Crops.—Wheat and rye may both be sown for spring use, the ground being highly manured and a large quantity of seed being employed.

Weeds should be mowed on wet days, gathered in heaps while wet, and when dry enough burnt. It is poor policy to put weed seeds into the manure, and if fed to hogs, a great portion of the seeds are not consumed. Hay seed, if not too dirty, may be mixed with swill to very good advantage. Biennial weeds are now expanding their bright green, vigorous leaves, making a fine growth. They may be seen in the mowing land, close to the ground, perhaps in part obscured by grass. It is not difficult to cut them up with a spud or with a heavy narrow hoe. Their name is legion, but some of the common ones are docks, dandelions, mulleins, ox-eye daisies, buttercups (which are perennial), wild tassel, golden-rod, wild parsnip, wild carrot, etc.

Plowing.—We know of only one crop which we think it is decidedly better to plow for in the spring; that is corn. For every other spring crop the plowing and manuring may be done in the autumn, except the soil be very sandy, in which case it is best to plow in the spring. Clays and wet soils are most benefited by fall plowing. On very stiff soil the advantage gained by exposure to the frost more than counterbalances the gain to corn by planting it on a fresh-turned sod.

Draining, etc.—As fast as hands can be spared from the essential labors of the farm, draining, road-making, fence-making, etc., may receive attention. It is safe to say that there are few farms in the country, where, upon some spots, draining, though quite expensive, would not pay better than any other investment.

Muck.—Improve a dry season to dig swamp muck and store it for winter use in the stables, or use it in composts, if it can be got dry and fine enough.

Manure.—Before cold weather sets in, all the manure in the yards and cellars should be hauled out and composted with muck, either in the field or elsewhere. These compost heaps, if well made, will not freeze, and no loss of valuable fertilizing substances will occur. In the spring they will come out fine and admirable for almost any purpose; and they may not only be of three or four times the bulk, but of three or four times the value, that the manure would have had, had it been left in the yard, or even in the barn-cellar.

Work in the Horticultural Departments.

Orchard and Nursery.

In many northern localities this month closes the season of out-of-door work. As not only have the crops to be gathered and stored, but provision to be made for early spring, October is of necessity a busy month in all departments.

Fruit.—Pick the late varieties. All good fruit should be picked by hand and handled with care to avoid bruising. Place in the bins in the cellar or in barrels.

Packing.—We have often insisted upon the advantage of the careful assorting and packing of fruit. There is nothing connected with fruit raising that pays better. See an extract from Quinn's Pear Culture, given last month. The directions given there for packing pears in the main apply to apples. Pack always from the bottom of the barrel, and then put in the bottom head with sufficient pressure to hold the fruit so firmly that it will not shake. The fruit should be kept at the lowest possible temperature, provided it does not freeze. The cellar should not be closed until the outside temperature makes it necessary.

Bars.—The method of treating the late varieties is given on page 379. Put the autumn varieties intended for home consumption upon shelves in a cool fruit-room and inspect frequently.

Cider and Vinegar.—The best use to make of inferior fruit is to convert it into vinegar. Good cider can be made only from good fruit. Much of the

stuff called cider is poor trash. If the apples are allowed to "sweat" in heaps for some time, they will lose a considerable amount of water and consequently yield a richer juice. It is better to put off cider-making until the approach of cold weather, as then the fermentation goes on more gradually, and a better article is the result.

Planting.—Wherever fall planting is advisable, let it be done as soon as the trees can be had. If they have been ordered, plow and prepare the land, and place a stake to indicate the position of each tree. When they arrive, they can be put in without delay. Do not mix varieties, but put those of a kind in the same part of the orchard. The advantage of this will be seen when there is fruit to be gathered.

Labels are attached to the trees at the nursery, and often are wired on so firmly that the bark is strangulated. Look to every label and see that no injury can result from this cause. The position of every tree should be recorded, so that when the labels become lost, as they will sooner or later, there will be no doubt about the identity of the trees.

Nursery Trees may be trimmed into shape, and, except on rich ground, a furrow should be run between the rows and manure placed in this, and covered. Trees budded this season will need looking after to see if the tyings do not need loosening.

Fruit Garden.

Grapes should be allowed to get thoroughly ripe, whether they are to be eaten upon the table, preserved for winter, or made into wine. When the fruit is fully ripe, the stalk which holds the bunch loses its stiffness, and the cluster hangs directly down from the vine. An article on keeping grapes will be found on page 378.

Strawberries.—If the runners have been rooted in pots, the plants may be set out in beds.

Blackberries and Raspberries may be planted. Cut the canes of the plants back to the ground, when they are set, no matter how long a stalk the nurseryman may have sent. Blackberries are usually set 6 to 8 feet apart, each way. Planting in hedges is gaining in favor—the rows 8 feet apart, and the plants 4 feet apart in the rows. The rows of raspberries may be 6 feet apart.

Currants and Gooseberries.—Prune when the leaves have fallen. The amateur is likely to prune too little, rather than too much. Make the bush so open by cutting out the old wood that light and air can penetrate it. The new wood, the growth of last summer, is to be shortened one-half, if strong, and more than this, if the shoots are weak. These bushes may now be propagated by

Cuttings, for which the new wood removed in pruning is used. Cut it in lengths of 6 inches and set it 4 inches apart in a trench, with one inch of the upper end above the surface. Press the soil firmly against the cuttings in filling the trench, and when the ground begins to freeze, cover with leaves.

Kitchen Garden.

Draining in most places is a necessity, and it can be advantageously done this month. Our frequent articles on firm drainage will give the necessary hints for garden work.

Preparation for Spring in the way of plowing and manuring may be advantageously done on vacant lands. Stiff lands are much ameliorated by being thrown into ridges to weather during the winter.

Asparagus.—When the growth is over, which is shown by the tops turning yellow, cut the stalks and burn them. If put into the manure heap, the seeds will produce troublesome weeds.

Protection.—Plants left out through the winter, such as spinach, sprouts, etc., must not be covered before the ground begins to freeze.

Preserving Root Crops.—Have bins in the cellars, barrels, etc., ready for storing, as sudden cold weather may make it necessary to hasten the work. Pits 3 or 4 feet wide and 6 feet deep preserve roots admirably. A section 2 feet in length is packed with roots, 6 inches from that another section of

2 feet, and so on. The six-inch spaces are filled with earth, and the trench, when filled, presents alternate sections of roots and earth. Some litter is thrown over the top, and when freezing weather comes, the trench is covered with earth. This must be done in a place where water will not settle.

Cabbages.—Prepare cold frames for wintering the young plants from seeds sown last month. The frames are a foot high at the back and 8 inches in front, and wide enough for an ordinary sash. Set the plants $2\frac{1}{2}$ inches apart each way, and down to the leaves, covering all the stem. They do not need covering until freezing weather.

Cauliflowers are treated the same as cabbages.

Celery.—Finish earthing up, banking the earth well up against the stalks, nearly to the top of the leaves. In cold localities it may be stored in trenches the latter part of the month.

Lettuce.—Some of the hardy kinds will winter over in the open ground, with a light covering of litter or leaves. That intended for early spring is to be put into cold frames, as directed for cabbages.

Rhubarb.—If new plantations are needed, it is better to make them in the fall than in spring. After the leaves are dead, cut up the old roots so as to have a bud to each piece, and plant in a rich spot. It can hardly be too heavily manured.

Spinach.—Cultivate the late crop, and thin.

Squashes.—Cut before they are injured by frost, and leave for two days in the sun. Place them in a cool, dry place, where there will be no danger of freezing. In handling them, great care must be observed, as the least bruise leads to decay.

Sweet Potatoes.—Dig as soon as the first frost kills the vines. Choose a warm, bright day for digging, and allow them to lie in the sun to dry. In packing those to be kept for winter, use perfectly dry leaves, cut straw, or sand. Handle with the greatest care, so as not to bruise them. It is essential that the temperature should not be below 60° in the room where the potatoes are stored for the winter.

Flower Garden and Lawn.

Whatever improvements are to be made, such as laying out walks and drives, grading, draining, and making borders, can be much better done now while the ground is in good condition than in spring.

House Plants that have been put into the borders should be taken up at once, if it is desired to keep them another season. The overgrown ones should be well cut back. Shade them for a few days, until they recover, and then give them a good exposure until it is necessary to remove them to the house.

Cannas must be taken up before the frost has killed the foliage; otherwise the roots are apt to rot.

Chrysanthemums.—When the buds are well formed, pot for blooming indoors. See that those left out are well supported by stakes.

Peonies are best removed this month, and the old roots may be divided.

Perennials, if they have been in one place for three or four years, should be taken up, divided, and reset.

Bulbs.—The hardy kinds, such as Tulips, Hyacinths, Crocuses, Crown Imperials, etc., are to be planted as soon as they can be obtained. See article on p. 377. The tender varieties, like Gladiolus, Tiger-flowers, etc., are to be taken up after the early frosts, dried off, and stored in a cool, dry place, where they will not freeze.

Dahlia.—After the foliage is killed, dig the roots on a warm, sunny day, using care, as they are very easily broken. When dry, label separately, and store in a dry cellar.

Trees and Shrubs.—Set all the deciduous ones, whether as single specimens or for hedges.

Protection.—Collect materials for covering half-hardy shrubs and plants. Where red cedar is abundant, it will be found one of the best materials. Near the coast, salt hay is much used. Leaves from the lawn and forest are valuable. It is a great mistake to put on the covering too early. Not only tender plants, but hardy perennials, come out all the better in spring for a protecting covering.

Green-house and Window Plants.

Though there may be no frosts, it is better to take in the more tender plants, than to expose them to the cool nights. Top-dress, by removing the surface soil and replacing it by a good compost.

Insects.—See that none are taken into the house with the plants.

Dulbs.—Pot for winter blooming. Use rich, light soil, and when potted place in a cool, dark cellar, for the roots to form; or the pots may be placed in a frame and covered with some inches of coal ashes or tan. In this case it is best to invert a small flower-pot over each pot, to avoid breaking the bud, should it start, in removing the pots.

Pots and soil, for winter use, should be ready and under cover.

Forcing Plants.—Dentzia gracilis, Dicentra, Lily of the Valley, Astilbe Japonica, and other spring-blooming plants, may be potted and kept in a cool place, to be forced in February.

Annuals may be sown in pots, for winter blooming. Mignonette and Candytuft are always in demand for making bouquets in winter.

Ventilation.—Give plants, both in the green-house and in rooms, an abundance of air during the day.

The Fairs for 1869.

HELD ON AND AFTER OCTOBER 1ST.

State and National Fairs.

Table listing state and national fairs with locations and dates, including American Institute, Cherokee Country, Illinois, Indiana, Louisiana, Maryland, Minnesota, Missouri, Nebraska, New York State Poultry Soc., New Hampshire, North-western Poultry, North Carolina, Oregon, Pennsylvania, South Carolina, St. Louis, Utah, Tennessee, Virginia, and Wisconsin.

Horticultural and Kindred Fairs.

Table listing horticultural and kindred fairs, including Knox's Grape Show in Pittsburgh.

County and Local Fairs.

MAINE.

Table listing county and local fairs in Maine, including Old Kennebec, Orland and Buckport, Waldo, and Waldo and Penobscot.

NEW HAMPSHIRE.

Table listing county and local fairs in New Hampshire, including Merrimack.

MASSACHUSETTS.

Table listing county and local fairs in Massachusetts, including Barnstable, Berkshire, Bristol, Hampshire, Franklin and Hampden, Hampden, Hampton East, Hantsfield, Marshfield, Martha's Vineyard, Middlesex, and Worcester.

VERMONT.

Table listing county and local fairs in Vermont, including Black River Valley, Caledonia Co., Chittenden Co., Orange Co., Washington Co., and Windsor Co.

NEW YORK.

Table listing county and local fairs in New York, including Albany, Bristol, Chenango, Clinton, Hammond Union, Lenox, Queens Co., Staugerfield & Marshall, Steuben Co., Schoharie Co., Seneca Co., Schenectady, Suffolk Co., Wyoming, and Washington Co.

CONNECTICUT.

Table listing county and local fairs in Connecticut, including Danbury, Fairfield Co., Hartford Co., Middlesex Co., Milford and Orange, Pequot, Poultry Show, Union, and Woodbury.

NEW JERSEY.

Table listing county and local fairs in New Jersey, including Burlington.

PENNSYLVANIA.

Table listing county and local fairs in Pennsylvania, including Altoona, Berks, Blair Co., Chester Co., Columbia Co., Doylestown, Franklin Co., Huntingdon Co., Lancaster Co., Montgomery Co., Northampton Co., Williamsport (Horse), and York.

MARYLAND.

Table listing county and local fairs in Maryland, including Carroll Co. and Frederick Co.

OHIO.

Table listing county and local fairs in Ohio, including Augusta, Butler Co., Champaign Co., Crawford Co., Cuyahoga Co., Delaware Co., Hancock Co., Hardin, Harrison Co., Logan, Lorain Co., Mahoning Co., Morgan Co., Noble Co., Pataaskala, Plymouth Co., Sandusky Co., Seneca Co., Stark Co., Thompson, Tuscarawas, Winchester, Wellington, and Wood Co.

KENTUCKY.

Table listing county and local fairs in Kentucky, including Carroll, Christian, Fayette Co., Henderson, Ky. Ag'l. and Mech., and South Kentucky.

INDIANA.

Table listing county and local fairs in Indiana, including Jennings, Laporte, La Grange, Spencer Co., Vermillion Co., and Wayne Co.

ILLINOIS.

Table listing county and local fairs in Illinois, including Boone Co., Clark Co., Fulton, Greene Co., Jersey Co., Jo Daviess Co., Kane Co., Kankakee Co., La Salle Co., Macon Co., Macoupin Co., Mercer Co., Perry Co., Piatt, Pike Co., Pope Co., Randolph Co., Randolph Co., Schuyler Co., Sycamore, Union Soc., Wabash Valley, Woodford Co., and Wayne Co.

MICHIGAN.

Table listing county and local fairs in Michigan, including Cass Co., Calhoun Co., Clinton Co., Genesee Co., Gratiot Co., Grand Traverse, Hillsdale Co., Ionia Co., Jackson Co., Kent Co., Leape Co., Livingston Co., Macomb, Montcalm Co., Oakland Co., Saginaw Co., Sanilac, St. Joseph Co., Shiawassee Co., Tuscola, and Washtenaw Co.

MINNESOTA.

Table listing county and local fairs in Minnesota, including Dakota Co., Fillmore and Mower Co., Goodhue Co., and Wabashaw Co.

WISCONSIN.

Table listing county and local fairs in Wisconsin, including Beaver Dam, Green Co. (Horse), Lacrosse Co., Pierce Co., Vernon Co., and Walworth Co.

IOWA.

Table listing county and local fairs in Iowa, including Ames, Benton Co., Cass, Clayton Co., Crawford Co., Davis Co., Jackson Co., Lee, Lucas Co., Mills, Montgomery Co., Tama Co., Union Co., Union Dist., Van Buren Co., and Wayne Co.

MISSOURI.

Table listing county and local fairs in Missouri, including Bates Co., Buchanan Co., Chariton Co., Cooper Co., Dade Co., De Kalb Co., Gentry Co., Green Co., Lafayette Co., Lewis Co., Louisiana (Township), Macon Co., Montgomery Co., N. Mo. Stock, etc., People's Ag'l. and Mech., Ray Co., Scotland Co., St. Joseph Co., St. Louis Mech. etc., Vernon Co., and Webster Co.

VIRGINIA.

Table listing county and local fairs in Virginia, including Rockbridge, Border Fair, Va. & N. C., Lynchburg, and Rockbridge.

WEST VIRGINIA.

Table listing county and local fairs in West Virginia, including Monongahela Valley.

NORTH CAROLINA.

Table listing county and local fairs in North Carolina, including New Hanover.

TENNESSEE.

Table listing county and local fairs in Tennessee, including Maury, Montgomery Co., Murfreesboro, Robertson, Warren, and Wilson.

MISSISSIPPI.

Table listing county and local fairs in Mississippi, including Oktibbeha.

ALABAMA.

Table listing county and local fairs in Alabama, including East Alabama.

OREGON.

Table listing county and local fairs in Oregon, including Linn and Washington Co.

CANADA.

Table listing county and local fairs in Canada, including Barton and Glanford, Bothwell, Clarke, East Garafraxa, Erin, Howard, Hibbert, King, Middlesex, West, Northumberland, Ottawa, Oxford, North R., Perth, S. Riding, Perth, N. Riding, Raleigh, Simcoe, South, Trafalgar, Wentworth & Hamilton, and West Garafraxa.

Commercial Matters—Market Prices.

Gold has fluctuated widely, during the month under review, having been as high as 137 3/4, and as low as 133 1/4, but it closes with rather more steadiness at 135 1/4. There has been a more active movement in Breadstuffs, but, under free receipts of the leading articles, there has been less firmness in prices. The export purchases of Wheat have been extensive, though checked to some extent by the scarcity of freight room and the advanced rates claimed by ship-owners. This demand has run mainly on red and amber winter, and No. 2 Spring Wheat. The receipts of Spring Wheat have been generally of inferior or damaged lots, and have been bought chiefly for shipment by the steamers to Liverpool, London, and Glasgow. The bulk of the winter wheat has been exported in sailing vessels, though a considerable portion of the exports of new crop went in the steamers, having been soft and heated, and consequently not adapted to sailing.

vessels. The shipping inquiry for Flour has also been fair, and has been mainly for low grades of State and Western, fresh ground. Corn has been in request for home use exclusively. There has been a lively movement in Oats, chiefly on speculative account, but at variable prices. Provisions have been less sought after, and have been unsettled in value. Cotton has been in very light supply and limited demand at the extreme prices claimed by holders. Wool has been quite moderately dealt in at about previous figures. Tobacco has been active at advanced rates, particularly low grades of Kentucky. Hay, Hemp, and Seeds, have been very quiet. Hops have been more inquired for.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for the month ending Sept. 13, 1869, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats, 25 days this m'th. 2,550,000 2,738,000 729,000 2,400 5,300 870,000
25 days last m'th. 3,170,000 3,558,000 1,339,000 71,000 39,000 870,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats, 25 days this m'th. 3,241,000 4,589,000 1,427,000 58,000 1,571,000
25 days last m'th. 4,955,000 5,478,000 2,293,000 89,000 1,396,000

2. Comparison with same period at this time last year.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats, 25 days 1869. 350,000 2,738,000 729,000 2,400 5,300 870,000
26 days 1868. 117,000 641,000 2,416,000 3,500 49,500 713,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats, 25 days 1869. 331,000 4,589,000 1,427,000 58,000 1,571,000
26 days 1868. 337,000 1,236,000 3,217,000 31,000 1,916,000

3. Exports from New York, Jan. 1 to Sept. 11:

Flour, Wheat, Corn, Rye, Barley, Oats, 1869. 975,290 11,615,661 1,577,677 114,006 45,097
1868. 642,954 3,285,073 5,300,513 153,093 14,159

4. Stock of grain in store at New York:

Wheat, Corn, Rye, Barley, Oats, Mill, 1869. bush, bush, bush, bush, bush, bush, bush.
Sept. 6. 745,121 127,736 56,051 183,920 131,870
Aug. 9. 634,292 238,155 73,797 361 50,219 105,458
July 10. 531,657 328,613 71,418 2,969 259,985 97,177
June 7. 637,877 385,241 107,562 383 555,991 109,746
May 1. 1,056,048 394,156 107,502 17,684 613,166 77,677
Apr. 10. 1,484,833 1,080,799 165,000 48,281 1,178,710 66,994
March 10. 1,990,416 1,391,167 318,880 2,900,157 3,005,065
Feb. 10. 2,708,602 1,407,616 325,182 91,284 2,300,479 28,034
Jan. 13. 3,534,172 1,509,233 263,360 54,710 2,894,254 236,001

1868. Dec. 11. 3,475,544 2,005,819 387,101 319,221 3,011,591 90,526
Nov. 10. 1,821,657 2,773,809 123,218 371,055 2,042,793 23,601
Oct. 12. 483,506 2,508,744 31,225 2,622 1,308,936 59,551
Sept. 9. 246,549 2,143,590 16,690 256,427 97,094
Aug. 11. 583,570 1,611,468 575 480,100 92,995

CURRENT WHOLESALE PRICES.

	Aug. 14.	Sept. 13.
PRICE OF GOLD	134 1/2	135 1/2
Flour—Super to Extra State	5 83 @ 7 50	5 75 @ 7 15
Super to Extra Southern	6 65 @ 12 00	6 50 @ 11 50
Extra Western	6 60 @ 12 00	6 25 @ 11 00
Extra Good	7 50 @ 9 00	7 20 @ 8 25
Superior Western	6 85 @ 6 45	5 25 @ 6 25
RYE FLOUR	4 45 @ 6 75	4 30 @ 6 50
COEN MEAL	5 00 @ 6 20	5 25 @ 6 25
WHEAT—All kinds of White	1 65 @ 1 90	1 55 @ 1 80
All kinds of Red and Amber	1 45 @ 1 80	1 28 @ 1 70
CORN—Yellow	1 18 @ 1 23	1 18 @ 1 23
Mixed	85 @ 1 10	95 @ 1 17
OATS—Western	75 @ 76	65 @ 71
State	74 @ 76	66 @ 69
RYE	1 23 @ 1 28	1 15 @ 1 20
BARLEY	1 50 @ 1 60	1 18 @ 1 30
HAY—Bale 100 lb.	60 @ 1 25	55 @ 1 05
STRAW—100 lb.	1 10 @ 1 20	65 @ 1 05
COTTON—Middleling, # 2	33 1/2 @ 34 1/2	34 1/2 @ 34 1/2
HOPS—Crop of 1869, # 2	7 @ 12	11 @ 20
FEATHERS—Live Geese, # 2	5 @ 95	85 @ 95
SEED—Clover, # 2	13 @ 14	13 @ 14
Timothy, # bushel	4 75 @ 5 25	4 50 @ 4 75
Flax, # bushel	2 10 @ 2 25	2 40 @ 2 50
SUGAR—Brown, # 2	10 1/2 @ 13 1/2	11 @ 13 1/2
MOLASSES, Cuba, # gal	60 @ 60	35 @ 30
COFFEE—Igo, (Gold, in bond)	8 1/2 @ 12 1/2	8 1/2 @ 12 1/2
TOBACCO, Kentucky, &c., # b.	5 @ 17	7 1/2 @ 16 1/2
Seed Leaf, # b.	6 @ 75	9 @ 75
WOOL—Domestic Fleece, # b.	44 @ 60	45 @ 60
Domestic, # b.	32 @ 48	32 @ 47
California, unwashed	22 @ 32	22 @ 34
TALLOW, # b.	11 @ 13 1/2	11 1/2 @ 12 1/2
OIL—Coke, # ton	50 00 @ 51 50	50 00 @ 51 00
PORK—Mess, # barrel	32 75 @ 33 87	30 50 @ 31 25
Prime, # barrel	27 25 @ 28 50	26 75 @ 28 00
BEEF—Plain mess, # bbl.	4 00 @ 16 00	3 50 @ 12 50
LARD, in tins, & 10 lbs, # b.	17 1/2 @ 20 1/2	16 3/4 @ 18 1/2
BUTTER—Western, # b.	16 @ 18	18 @ 33
State, # b.	15 @ 19	24 @ 55
CHEESE	7 @ 15	7 @ 16 1/2
BEANS—# bushel	1 40 @ 2 20	1 40 @ 2 20
PEAS—Canada, 100 lb, # bush.	1 50 @ 2 20	1 50 @ 2 20
EGGS—Fresh, # dozen	22 @ 22	25 @ 30
POULTRY—Fowls, # b.	20 @ 22	20 @ 22 1/2
Turkeys, # b.	21 @ 22	20 @ 23
POTATOES, New, # bbl.	88 @ 1 50	1 00 @ 1 75
APPLES—# barrel	2 00 @ 4 50	2 50 @ 5 75
SWEET POTATOES, # bbl.	50 @ 77	— @ —
PUMPKINS, # bbl.	50 @ 77	1 00 @ 1 25
CABBAGES—# 100	3 00 @ 6 00	— @ —
ONIONS—# bbl.	2 75 @ 4 50	2 25 @ 3 50
GREEN CORN—# 100	70 @ 1 12	50 @ 87
TOMATOES—# crate	60 @ 1 00	— @ —
CUCUMBERS—# 100	75 @ 1 25	— @ —
FRUITS—# 100	49 @ 1 25	75 @ 3 25
SQUASHES—# bbl.	75 @ 1 00	1 00 @ 1 00
PEARS—# bbl.	5 00 @ 12 00	3 00 @ 14 00
MELONS—# bbl.	75 @ 2 00	1 00 @ 2 50
WATERMELONS—# 100	7 50 @ 37 50	5 00 @ 25 00
GRAPES—# b.	30 @ 29	8 @ 30
BROOM-CORN—# b.	16 @ 21	— @ —

New York Live Stock Markets.

The supply of stock for each department has been steady and even—excepting for the week ending Sept. 6th, when the supply of beef cattle was unprecedented. Butchers say, that there was never before such a quantity

for sale at one time, while for quality we hope never to see its like again. They were poor, and many fit only for store cattle. We noticed an unusual number of what are known as "State cattle" in small lots, brought from within 50 to 100 miles of New York. The advance of 1/2c. per pound the week previous called everything in,—good, bad, and indifferent,—and the result was plenty of bulls, dry cows, and small things. Prices at once dropped to their old standard of two weeks previous,—15@16c. per pound for "Tops." The new National Drive Yards at Weehawken, N. J., opposite 42nd St., New York, were opened for stock on August 30th, and the Butchers and Drovers for once agreed to have a jolly time. The table was bountifully supplied with all good things, and what sales were made were quickly settled. The grounds are not entirely completed, but 40 yards are in readiness for stock, and the Erie R. R. will hereafter unload their stock trains at these yards. The weather has been quite cool for the season, and butchers have felt more like buying. People, too, are returning home from their summer vacations, and more and better beef is called for, and butchers feel that they can buy something really nice even at a little higher price. Below we give the range of prices, average prices, and the figures at which the largest lots were sold:

Aug. 16, ranged 10 @ 15c. Av. 14 1/2c. Largest sales 12 1/2 @ 15
do. 20th do. 10 @ 16c. do. 13 1/2c. do. do. 13 @ 15
do. 30th do. 11 @ 16 1/2c. do. 14 1/2c. do. do. 13 1/2 @ 15 1/2
Sept. 6th do. 10 @ 16c. do. 14 1/2c. do. do. 13 @ 15
do. 13th do. 10 @ 16c. do. 14 1/2c. do. do. 13 @ 15

Some few very fat Illinois steers sold on Aug. 30th at 17c. This was at the new yards in Weehawken. The majority, however, of the best only reached 16 1/2c.; even good steers, a little small for our market, were sold for 15 1/2c. per pound. This advance, however, lasted only for a day or two, for the great rush of Sept. 6th sent down prices at least one cent per pound on all kinds. Indeed some of the poorest were sold by the head as low as \$45@50 each, or about 10c per pound. **Milch Cows.**—We notice but little change in this department. The arrivals have been steady and quite equal to the demand. Moderately good milkers perhaps bring a little higher price and poor ones sell slowly. Some few brought from \$100@110, but this is "fancy." Prices range for good from \$80@90, and medium to poor all the way down to \$50, according to milking quality. **Calves.**—Very few really good, fat calves are in market. The price advanced a little for the week ending Aug. 30th, and dropped again with the abundant supply of beef. Such as are really fat and good sell for 11@12c., common 9@10 1/2c., and inferior ones at 6c. and less. **Sheep** have been plenty and not very good. The quality is perhaps improving somewhat, and prices keep about the same. The market has kept up and sales are steady. We cannot notice any advance in price. Lambs, if they are fat, go off readily at from 8 1/2@8 3/4c. per pound; for very choice 9c. is paid. Sheep vary from 4 1/2c. for poor, to 6 1/2c. for good. Some are still sold by the head. **Swine.**—The arrivals have been a little less than those of last month and although the weather is more favorable for keeping meat, the demand is not active and the market is dull. Prices are at least 1/2c. per pound lower than was paid last month. Dressed hogs, if fat, bring 12 1/2c. per pound. On foot they sell from 9@9 1/2c.; if very choice 10c. is paid.

WEEK ENDING. Bees, Cows, Calves, Sheep, Swine, Totl.
August 16th. 6,617 110 2,288 31,326 21,000 61,641
do. 23th. 5,954 65 3,160 31,675 21,682 65,146
do. 20th. 6,551 119 2,333 31,545 21,003 61,561
Sept. 6th. 8,769 124 2,454 34,983 18,384 65,196
do. 13th. 7,068 102 2,429 39,447 18,000 67,136
Total in 5 Weeks. 34,569 529 12,721 172,181 100,699 329,680
do. for prec. 4 Weeks 27,021 436 10,394 131,471 89,931 259,417

Average per Week. Bees, Cows, Calves, Sheep, Swine.
do. do. last Month. 6,514 104 2,544 34,426 20,149
do. do. prec's Month. 6,235 85 3,434 34,443 50,851
Average per Week, 1868. 5,733 105 1,888 27,182 18,899
do. do. 1867. 5,514 61 1,820 21,154 26,605
do. do. 1866. 5,748 94 1,300 20,000 18,000
do. do. 1865. 5,255 118 1,500 16,091 11,023
do. do. 1864. 5,161 145 1,511 15,315 12,676
Total in 1868. 298,125 5,466 82,571 1,413,479 978,061
Total in 1867. 292,893 3,293 69,911 1,171,154 1,102,643
Total in 1866. 288,880 4,885 62,420 1,040,000 672,000
Total in 1865. 270,271 6,161 77,991 836,783 578,190
Total in 1864. 267,609 7,603 75,621 782,462 660,277

Hale's Early Peach.—W. L. Sanborn, Princess Anne Co., Va., finds that the Hale's Early rots badly when green, is much attacked by the curculio, and will not bear shipping. He asks what has been the experience of others. It has a similarly bad reputation for rotting in some parts of Illinois, and some cultivators discard it.

California Fruit.—A quantity of pears, grapes, etc., were received in August by rail from California. Some of the fruit arrived in fair order, and the experiment, if not altogether a success, was encouraging. Long after this fruit has been disposed of, we see at the fruit stores and stands the sign of "California Fruit," and doubtless many buy Jersey Bartlett pears at a good price, thinking that they came from California.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be prepaid at the Post-office where the paper is received.

How to Remit.—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of Orange Judd & Co.

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect Oct. 1, 1868, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the Registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money, and seal the letter in the presence of the postmaster, and take his receipt for it. Letters thus sent to us are at our risk.

Bound Copies of Volume XXVII (1868) are now ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (16 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume (50 cents extra if returned by mail). Missing numbers supplied at 12c. each.

The Basket Pushed Along.—The publishers have provided some very attractive reading, which will be found on pages 364 to 367. It is only once a year that they turn editors, and they think so well of their efforts that a good share of the Basket is pushed along to page 386, where will be found various items, together with some notes from Mr. Judd, who is sojourning in the Far West.

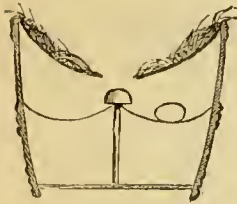
The Premiums.—The publishers make their annual announcement of premiums, and in doing so they to a certain extent break up the usual arrangement of the paper. We feel less regret at their occupying the editorial columns when we remember that while these premium offers are a good thing to the publishers they are still better for our subscribers. Hundreds of useful things have gone into families who probably would never have obtained them but for the facilities thus offered. The articles are all good, and as we editorially are obliged to read much of the correspondence, we know that the recipients of the premiums express general satisfaction. The publishers will fulfill their promises to the letter, and the half dozen comprised in the editorial "we" will try to make the paper more valuable than ever before.

The Fairs.—As we go to press, the N. Y. State Fair just opens at Elmira, and the meeting of the American Pomological Society is commencing at Philadelphia. The *American Agriculturist* will be represented at both these important points, as well as at as many of the local fairs as we can find time to visit. We do not find it expedient to make extended reports of fairs, as it serves the purpose of our readers better to have the information gathered from these exhibitions presented from time to time, rather than in the form of a dry catalogue. A great exhibition is being held in New York City by the American Institute. This, though devoted to industrial products generally, contains much that is of interest to the agriculturist and horticulturist in the way of implements, etc. None of our readers who visit New York should fail to see this great display of the products of American skill. By the way, October is the finest month in which to visit New York.

How to Clean Barley.—("S. C. M.") South Carolina. When barley is dry and in good condition, and is thrashed with a machine, the beards are all knocked off and the barley is prepared for market by simply running it through an ordinary fanning mill. In England, where great attention is paid to the barley crop,

and where, owing to the fact that a high duty is charged on every bushel of barley converted into malt, it is very desirable to have the barley of the highest quality, and entirely free from all extraneous matter, they have a machine for breaking off the beards. But in our dry climate, and where the maltsters are not so particular, there is less necessity for it. Much of our barley is sold as it comes from the machine, without running it through a fanning mill.

Mabbett's Egg-saving Nest.—John H. Mabbett, of Vineland, N. J., seeing the nest-box described in the September number, sends us a drawing and description of one which he has made and used with



entire success. It is shown in the accompanying figure. Mr. M. takes a nail keg or butter tub, sets a short post in the centre, and tacks a piece of sacking so as to form a sort of loose diaphragm near the middle, raised up in the centre by the post. Upon the top of this post he screws half a wooden egg. Then a piece of sacking is cut to fit the top of the tub and hang loose down nearly as low as the top of the post. In the middle of this a hole is cut large enough to pass one's hand through, and locks of hay are stitched flat upon the sacking in a way not to prevent an egg rolling down into the hole. This is then tacked upon the top of the tub, as shown in the sketch, and completes the affair. Hens take readily to such a nest, and their eggs drop through out of sight. The nest egg is always in sight and every thing looks right. The eggs must be removed daily or there will be risk of breaking. In place of the diaphragm of cloth the tub might be half filled with hay.

Fine Tomatoes.—Col. Geo. E. Waring, Jr., of Newport, R. I., sent us some tomatoes, which in these days of many good tomatoes are noticeable for their size, smoothness, weight, and solidity. With all these good qualities they have a most excellent flavor, the best, we think, of any variety we have tested this season. Col. W. assures us that they are very early. We understand that they are the result of 23 years careful crossing and selection by a careful man. So fine a fruit as this should have a name.

Early Mohawk Potato.—This new variety, introduced by Mr. S. B. Couver, was very generally distributed for trial, and we hear good accounts of it. Our trial samples produced the most vigorous and dark green foliage of any among a large number of other varieties. It is a good bearer, and produces tubers of good size and shape, with very few small ones. We can see no appreciable difference in the time of maturing between this and the Early Rose. It cooks mealy, but is of a rather more solid texture than the Early Rose, and it has more flavor than that variety. We consider the Early Mohawk a valuable addition to our list of Early Potatoes, and it keeps well late into the Spring.

Wright's Poultry-book.—The first edition of this work went off in an unexpectedly rapid manner, and when it was exhausted, there was a large number of unfilled orders on hand. The delay in preparing another issue was unavoidable, but it is now ready, and we shall endeavor hereafter to keep a supply of this most excellent work.

Sundry Humbugs.—Messrs. Dailey & Co., of New York, one of the many firms engaged in the manufacture of spurious U. S. notes, have a new dodge. Inclosed with their circular letter, they send what is represented to be a slip cut from some daily paper. It reads as follows: "A Dangerous counterfeit. Ten-dollar Treasury Notes almost exactly imitated.—The Treasury officers almost deceived.—Washington, August 18th. Treasurer Spinner and several Treasury experts to-day examined a ten-dollar counterfeit greenback sent here by some unknown person from New York, which was pronounced the best-executed counterfeit that ever came under their notice; indeed, there was some difference of opinion as to its being a counterfeit, even after its surface had been closely examined by a powerful microscope. The counterfeit is more dimly printed than the genuine, giving it the appearance of one of the last impressions of a large number; but in all other respects it is difficult to distinguish it from a good note, with which the comparison was made." In their circular letter Dailey & Co. go on to say: "We got a friend to send one of our \$10 bills to Washington a short time ago, to see if it could be detected. It was detected, but only after a severe and protracted investigation. Still they will pass, and are just as good" etc., etc. Now, if Dailey & Co. did send that \$10 bill to Washington, and the

authorities cannot find them out and punish them, they are derelict in their duty. If said Dailey and Co. did not send it, they have a very clever way of making people think they did. No honest person would think of trusting them, or investing in fraudulent money; and to the foolish or headstrong we give our warning—rest assured that detectives are on the look-out for all dealers in counterfeit money, and if you would not suffer the penalty of breaking the law, give all counterfeiters a wide berth. . . . Kelley & Co., of "Kelley Weekly" notoriety, are around again with their Oil Stock. This time they are managed by Messrs. Wogan & Co., New York. It is the old story revived, and of course none of our readers will be caught in this very old trap. Their "receiver" issues a circular to "ticket holders of Kelley & Co.'s Gift Entertainments." Of course more money is wanted, before the gift can be had. "We have no doubt their patrons have lost all patience" with them, as their "Particular Notice" says,—and, we might add, their money too. No, Mr. Wogan, that won't do; it is too old: the Kelley oil-works and all the rest of it was pumped dry months ago. . . . We know nothing of F. T. Sage's process for making vinegar, and cannot comment upon it. . . . We are so often asked about this and that doctor, that we feel called upon to repeat—We hold all advertising "Doctors" as quacks, and not in good standing with their professional brethren. . . . We know nothing about the "New England Watch Manufacturing Company" or their "Aluminium Brilliance" Watches. Never buy cheap watches is our advice to every body. A good watch is worth paying for, if a person needs one. Cheap watches, as a rule, are perfect failures, if not actual frauds. . . . The Gift Enterprise business seems to be on the decline. We have but one before us worthy of notice, and that is only new in name—A. B. Taylor, New York. This gentleman proposes to send a prize ticket of the managers, worth \$200, to any person who will first send him \$1 to get the ticket with,—all of which sounds very plausible, only the trick is old, and we advise all persons to keep their \$1, and forego the chance for \$200. . . . As we predicted some months ago, when the "One Dollar Stores" were so popular, they have gradually died out, or dwindled down to "Any thing on this counter for a quarter." In short, it is a magnified street peddler's "jewelry card board." Much that is sold in them is trashy, and not worth taking home. Let strangers in New York look out for the well-dressed, smooth-tongued young men who hang about the street corners and offer cards of Oroide and other jewelry shops. These chaps can tell a stranger at a glance, and when one is persuaded to enter one of their underground dens, he is pretty sure to come out fleeced by what is called the envelope game. Many lose their money and say nothing about it, but almost every day a complaint is made to the authorities, when the rogues refund the money, and are allowed to carry on their game unmolested. Among the mysterious things in New York is the way in which this rascality is permitted. The places are well known to the authorities, but they do not break them up.

Name, Town, County, State.—Now that so many will be renewing their subscriptions, and sending new ones, we would say to them, as well as to those who write upon editorial matters, Look at your letter before you seal it, and see that the name is signed, and that Post-office, County, and State, are plainly given. Many will think this a superfluous caution, but among the many thousands of letters that we receive, there is an astonishing number which contain no clue to the writer's whereabouts. The post-mark is frequently a mere blotch, and we are often without this guide to the place at which the letter was mailed. It is often the case that every part of a letter will be written plainly except the name, which should be the most distinct of all. Attention to these points will often save us trouble, and our subscribers disappointment.

Plants Named.—B. F. Transon & Bro., Humboldt, Tenn. Virgin's Bower, *Clematis Virginiana*. See *Agriculturist* for Nov. last. . . . Geo. Maec, Marquette Co., Wis. No. 1. Lead Plant, *Amorpha canescens*; No. 2. Early Meadow Rue, *Thalictrum dioicum*; No. 3. Wood Anemone, *Anemone nemorosa*. . . . Mrs. T. J. L. Apple of Peru, *Neantra physaloides*. . . . M. R. Young, York Co., Me. No. 1. Canada Tick-Trefoil, *Desmodium Canadense*; No. 2. Bladder Campion, *Silene inflata*; No. 3. One-flowered Wintergreen, *Moneses uniflora*. . . . S. R. F., Alden. Summer Chrysanthemum, *Chrysanthemum coronarium*, and not at all like Arnica. . . . Mrs. L. D. C., Negamee, Mich. *Bourardia triphylla*, a common green-house and bedding-plant, not hardy; cannot recognize the vine from the leaves. . . . T. M. I., St. Paul, Minn. Wild Pasque-flower, *Anemone patens*, var. *Nuttalliana*. . . . M. W., Lancaster Co., Pa. No. 1. Iron-wood, *Vernonia Vorboeracensis*; No. 2. Sneeze-weed, *Helium autumnale*; No. 3. Mexican Poppy, *Argemone Mexicana*; No. 4. Partridge Pea, *Cassia Chamærista*; No. 5. Great Willow-

herb, *Epilobium angustifolium*. . . . O. H. L., Lisbon Falls, Me. Bladder Campion, *Silene inflata*, a troublesome weed in some places. . . . Wm. B. Burleigh, Can. The white-leaved plant is *Euphorbia marginata*. We do not undertake to name plants from the leaves alone. . . . J. F. Mann, Oconomowoc, Wis. Low Hop Clover, *Trifolium procumbens*, of no agricultural value. . . . Mrs. M' Coy, La Porte, Ind. Cardinal-flower, *Loelia cardinalis*. Will grow well in the garden. . . . Mrs. H. A. T. H., Annawan, Ill. Ivy Linaria, *Linaria cymbalaria*. . . . S. Martin, Suffolk Co., L. I. Spurry, *Spargula arvensis*, cultivated in Europe for fodder. . . . M. Howk, Pleasant Hill, Iowa. The thing sent is a plant, a fungus, of the genus *Nidularia*, and commonly called Birds-nest fungus. It will reproduce itself. Mrs. J. C. J., Green Springs, O. Cardinal-flower—see above—and the Ground-nut—*Apis tuberosa*.

Machine for Pruning Trees.—"W. S.," Dayton, O. See advertisement of Doty's Pruner, in Sept. Fruit pickers are sold at all agricultural stores.

To Keep Potatoes for Seed.—When first dug, let them dry off well by lying several days spread out thin on the barn floor; if they are greened by the sun it is a double advantage, for no careless cook will take of them twice for boiling. Then place them in a cool, dry part of the cellar, on a floor of boards, and not more than two feet deep. Never keep them in barrels. Examine them occasionally during the winter, and if they show a tendency to grow, rub the eyes off and spread them out thinner.

Apple Butter.—Some of our readers wish a good recipe for Apple butter. Who will give it?

Bulbs.—The dealers now offer their stock of bulbs. The same amount of money cannot be expended on the flower garden in a manner that will give more satisfaction than in the purchase of spring-flowering bulbs. Bliss & Co., Thorburn & Co., and Henderson & Fleming, of N. Y., offer fine assortments, as do James Vick of Rochester, N. Y., Ferre, Batchelder & Co., Springfield, Mass., H. H. Dreer of Philadelphia, and others. Buy and plant early. See also our premium list, No. 33.

A Handy Corn-Shell.—"Rex" says: "If you have only a few bushels to shell, use your wife's zinc wash-board. I have tried it often; it does not hurt the zinc and is far better than a corn cob."

The Bushberg Catalogue.—Elaborate catalogues are now so common that they have ceased to be an exception. One just received from Isidor Bush & Son, Bushberg, Jefferson County, Mo., is an example of painstaking and conscientious work, worthy of notice. It is devoted to the grape and the small fruits, and contains besides a compact treatise on grape culture, as followed in Missouri, a very full catalogue of our native varieties with descriptions and many illustrations. It will prove much more useful to the grape-grower than some works of much greater pretensions.

One Man on a Two-Hundred Acre Farm.—Mr. T. B., of Wauconda, Ill., writes: "Laborers here are very scarce. In fact it is almost impossible to hire at all. I have two hundred acres, and have to do nearly all the work myself, so it is impossible to do the land justice."—There can be no doubt on that point; and furthermore, one man alone cannot work to advantage on a farm. The team must lie idle half the time. And how about cutting, curing, and drawing in hay and grain? Mr. B. adds: "I have 130 acres to grass and pasture, and shall seed more in the spring."—But even if the whole farm is in meadow and pasture, it would trouble us to manage it economically without some assistance. As a rule, we imagine it is in some way the farmer's own fault, or that of his neighbors, when laborers cannot be obtained. Wages are higher at the East than at the West, showing that there must be more men there, in proportion to the demand, than here. The trouble is in not giving steady employment.

Sheep Labels Wanted.—Parties are inquiring for them; manufacturers should advertise.

Norway Oats.—We would ask those who have made a trial of these oats in different sections of the country to give us their experience in brief.

Trouble with Pear Trees.—"E. W. L.," Lynn, Mass. The black spots on the bark are not satisfactorily accounted for, though some attribute them to a fungus. As they are noticed by you only on trees that are unthrifty, it would be well to manure the trees. If the injury is not extensive, cut away the diseased portions, and apply melted grafting wax to the wound.

Petroleum as a Paint.

There are two objections to the use of Petroleum as a paint—1st, It will not dry; and 2d, it gives out an odor that to some people is far from agreeable. We know a farmer who had an old buggy from which the paint and varnish had cracked off in spots. He painted it over with Petroleum, and while it stood in the carriage-house it looked "as good as new;" but the first time he drove out it happened to be a dusty day, and when he returned the buggy was "a sight to behold." And no amount of subsequent washing and rubbing has removed the dust. There it is, and there it will stay as long as the varnish and paint underneath adhere to the wood. But Petroleum, nevertheless, can be used to great advantage on a farm as a preserver of wood. It is not properly a paint. No coloring matter should ever be mixed with it. Ordinary linseed oil paint preserves wood by forming a coat that excludes the atmosphere from the pores. Petroleum penetrates the wood and excludes the air by filling up the pores. For light, porous wood, a rather heavy quality of Petroleum should be used, but for hard wood, such as oak, ash, etc., a Petroleum of a lighter specific gravity is best, as it penetrates the pores better. For wagons, machines, implements, tools, etc., from which the paint has more or less disappeared, there is nothing better than Petroleum. For a reaper, where it is important to keep the platform from warping, and the frame from shrinking, we find Petroleum invaluable. The wood should be kept saturated with it. It is poor policy to leave machines, wagons, and implements, exposed to sun and rain, but when this is necessary Petroleum will do much to prevent injury.

Old barns from which the paint is worn off will be much improved by a liberal coat of Petroleum. It can be put on with a whitewash brush. The point is to get on as much as the wood will absorb. It is better to go over the work rapidly and then the next day go over it again. For shingle roofs, new or old, nothing is better than Petroleum. In making a new roof we would dip the shingles by the bunch in Petroleum, until they were saturated, before putting them on. This would save the expense of applying it on the roof with the brush. The sills and timbers of barns and other buildings, in the parts most liable to decay, should be treated with Petroleum. A good way to do this is to bore a hole with an auger into the stick of timber, and fill it with the oil, and as it is absorbed, add more. The hole should afterwards be plugged up. The ends of all the timber should also be washed over repeatedly with Petroleum before being put in the building. In this way, soft maple, black ash, and bass wood, may be made durable timber, and as useful as oak when strength is not required. We repeat that Petroleum is not a paint. It preserves wood by filling the pores. It is worse than useless to mix anything with it. If it is desirable to paint, let ordinary paint be used. But if nothing more is desired than the preservation of the wood, use Petroleum—and mix nothing with it.

Tim Bunker on Ashes.

MR. EDITOR:—You've been printing for farmers some fifteen or twenty years, and I s'pose you think you've had your say on all farm topics, and the pond is getting dry. At any rate we've got folks up here whose ponds have been dry this twenty year. Can't get a new idea into their heads any more than you can drive a wooden wedge into a boulder. They farm it just as their grandfathers did, and would use wooden plows to-day if they had n't been driven out of the market by cast iron, and all the mechanics had not forgotten how to make them. Uncle Jotham Sparrowgrass, however, does get new ideas, but won't own it. He still swears by the Island, and what was n't known in the vicinity of Peconic Bay thirty years ago is n't worth knowing, and can't be of any use to the farming community. The Early Rose is the same potato they undertook to start on the Island when he was a boy, and South-wood was too smart to be humbugged by it. The King of the Earlies is the old Rohan in disguise, and he would n't give fifty cents for a cart-load on 'em. When he came upon Deacon Smith's big pile of peat ashes he walked round it, and stuck his cane into it as if it had been an old acquaintance.

"Wonder if the Deacon thinks he's going to make anything grow with this stuff. Wood ashes now would amount to suthin'. They tried 'em on the Island, and the way potatoes and grass started was a caution. But this burnt peat and turf aint worth the cartin'. A mighty sight of trouble he's takin' to skin his swamps, and he won't get a rush for it."

"Smith loves work," suggested Jake Frink; "kind o' keeps him out o' mischief."

"He'll make money out on't, see if he don't," said Tucker. "Put that creetur on a bare rock and he'd git rich sellin' the scrapins."

"If he could get anybody to buy 'em," added Jones.

"Never mind that," said Jake Frink. "He'd scent 'em with fish ile, and make folks believe it was genuine scrap instead of scrapins."

"The proof of the pudding is in the eating," said the Deacon, modestly. "Just walk over to my meadow and see what a hundred bushels of these ashes have done upon an acre of grass."

So we had to walk over and see where the soil had been eating that sort of pudding. I was astonished. Uncle Jotham was as quiet as a scared chicken in the grass. Could n't git a word out of him for some time. The Deacon is a master hand to bring folks right up square agin solid facts. There was the grass waist high, and the heads of timothy waving almost like a wheat field. You could see the line where the ashes stopped a long way off. Uncle Jotham marched up and down the line and poked his cane into the grass to make sure there was no barn-yard manure or sea-weed about the roots.

"Must be a mistake about it somewhere," said Uncle Jotham. "Never knew peat ashes to do anything."

"What will you do with the facts?" inquired the Deacon, coolly.

"Confound your facts," said Uncle Jotham, swinging his cane. "I can bring ten facts to your one, that peat ashes won't pay for burning."

"Well," said the Deacon, "this fact I know about. The peat ashes suit my land, and I shall keep straight on burning until the whole farm gets a good dressing. Three tons of herds-grass to the acre shows that the land likes it."

I guess the Deacon will make a small fortune out of that peat bog yet. You see, when he got a patch cleared of the brush, he had to pare the bog to get it ready for the cranberry plants. This was necessary work, whether he made any use of the parings or not. He reckons it costs about \$75 an acre to pare a foot deep. If there are fresh stumps it will cost more. A cord of these sods will make about four bushels of ashes if you burn them carefully. That is to say, you must not let the fire burn too freely, if you want to make the most ashes. You can regulate the fires by putting on more peat and sods, and by checking the ventilation. He calculates that he can get from an acre about 1,300 bushels of ashes, worth 20 cents a bushel for farming purposes. As the Deacon is forehanded, and does not need to sell the ashes to raise money, he markets them at home. If it pays other farmers to buy ashes at 20 cents a bushel, he thinks it pays him to make them out of his own materials, and use them upon his meadows. They may not be quite equal to ashes made from hard wood, but there cannot be a very great difference. There are many stumps and roots in the parings not yet decayed. These, of course, make wood ashes. Nearly all the rest is decayed wood and leaves, and the remains of such plants as flourish in swamps. Something, of course, is lost in the burning of

so much organic matter. It would be better if we could pass it all through the compost heap or barn-yard, on its way to the meadow, but it would take a great deal of labor to handle all this bulky material. Burning makes short work with it, reduces its bulk, and puts it in a condition to benefit the fields immediately. It is quite possible that the Deacon gains in time and in the saving of labor, all that he loses in material. At any rate he is doing pretty well in getting rid of his elephant. You see, 1,300 bushels of ashes at 20 cents a bushel, amounts to \$260 an acre. Allowing that it costs as much to cart and burn as it does to skin the bog, say \$150 per acre for both, he will have \$110 left for profit, or to go toward the expense of sanding his bog for cranberries.

These ashes must be very valuable for most farm crops, even where the burnings are not purely vegetable matter. Clay and upland sod, when burned and pulverized, produces astonishing results upon grass and other crops. An English gardener came along here a few years ago, and tried some burned clay that he took out of a drain, as a top-dressing. It put a new face upon all the crops in that garden that season, and the effects are still visible. I think the Deacon's experiments in making peat ashes are worth a good many millions to the country. Farmers who own swamps have in them the means of enriching their farms to almost any extent. It will certainly be safe to pare a few square rods, burn the turf, spread the ashes upon grass land, and mark the results. If we can get a thick, heavy sod, we need not be troubled about the other crops in the rotation.

Hookertown, Conn., } Yours to Command,
Sept. 15th, 1869. } TIMOTHY BUNKER, Esq.

How to Get and Keep Good Farm Help.

The complaint of the want of good help is very general, if not universal. Mike hires out for six months at \$30 a month and board, and works well until haying time, when he hears that Pat is getting \$3 a day at a neighbor's. He gets uneasy and quits. As a consequence he is out of work in the fall and winter, and barely gets enough to pay his board. The farmer has to get a new hand in place of Mike, on such terms as he can. We have several suggestions to make to parties who want good help upon the farm. Hire by the year. There is nothing so much needed upon our farms as more labor. With that we can make more manure, and more manure means larger crops, better dividends, and capacity to keep more cattle. There is no difficulty in keeping three or four good men busy all the year round, upon a 200-acre farm, and, if we have faith in our business, in finding the money to pay them. It is better for the hired men to be kept constantly employed, and better for their families. Take an interest in their welfare, and build cottages for them near the farm, or upon it. Encourage them to save something of their earnings to buy a home with. Men with families make the best laborers, and are most contented. Take an interest in their families, see that the children go to school, and when the boys are big enough, see that they have a chance to work and earn money for themselves. Help your help, and, as a rule, they will help you. They will see that their interests are identified with yours. Treat them as strangers or brutes, and they will reciprocate your incivilities. Even a cow will not give down her milk under the cudgel. CONNECTICUT.

AMERICAN AGRICULTURIST.

ORANGE JUDD & Co., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies: Four to nine copies, \$1.25 each; Ten to nineteen copies, \$1.00 each; Twenty copies and upwards, \$1 each. Papers are addressed to each name.

TO EVERYBODY.

READ LARGE VERY
READ FOR GOOD
READ Little and VERY
READ WORK. CHEAP.

TO

Farmers, Clergymen,
Gardeners, Physicians,
Fruit Growers, Teachers,
Stock Raisers, Lawyers,
Postmasters, Widow Ladies,
Merchants, Married Ladies,
R.R. Conductors, Maiden Ladies,
All Clerks, Girls and Boys,
To all desiring Profitable Employment,
etc., etc., etc., etc., etc., etc., etc., etc., etc.

READER, let us have a little familiar talk. We offer you a fine opportunity to benefit yourself, and to do good to others. We speak from the experience of many years. For example, a lady obtained \$3,250 for her time and efforts from Sept. 1868 to July 1869. Clergymen have increased their salaries and libraries; Teachers, Clerks, etc., have largely augmented their incomes; Widow ladies have partially supported their families; and Wives have obtained various useful articles. Railroad conductors have added largely to their wages while in their daily round of duty. Girls and Boys have secured for themselves and others choice things of great use to them.

We continue, as for many years past, to get up at great expense, a Journal or Magazine which is really very valuable to every family in the whole land—in Country, Village, and City. The aim of the American Agriculturist is to benefit every class of persons, young and old. The Engravings are not excelled in beauty and instructiveness by any other popular journal or magazine in the world. It aims to throw a charm around rural and domestic life, while at the same time

it gives practical hints and suggestions of great value. It constantly exposes the legion of Humbugs and Swindling schemes that infest the country, and in this way alone has saved millions of dollars to its readers. It aims to aid and cheer the Housekeeper in her daily cares. It labors assiduously to interest and instruct Children and Youth. Its success is proved by the fact that it has a larger list of constant readers than any other journal of its class in this or any other country. This paper clashes with nothing else. Every State has its local peculiarities, which are properly discussed by local journals that ought to be well patronized. But the American Agriculturist gives not only special information, but that of a general character everywhere useful; and it has facilities for a great amount of beautiful and instructive engravings possessed by no other paper.

Of the 4,000,000 families in our country, not more than 200,000 know how valuable and cheap this paper is. They would gladly subscribe if some one would show the paper and tell them about it.

Well, reader, what we now desire is, to get your aid, among your acquaintances, in telling them about the Agriculturist, and in receiving and forwarding subscriptions; and we propose to PAY you well. The reliable character of the Agriculturist, even in its advertising pages, makes it highly valuable to good advertisers, and they give us abundant means for premiums and profit.

Now, look at our Premium list. (See next column.) Every one of these articles is first rate. We warrant each Premium to be just as represented. On account of the advertisements, our premiums are obtained so low, that we can pay much more in premiums than in cash. These articles are very salable, and anything you do not wish to keep you can easily dispose of. Many make high wages by canvassing and selling the premium articles. The premiums are open to all, and, excepting the animals, can be supplied in any number.

It is easy to show the paper, explain its merits, and collect names enough for a premium. Some of the best canvassers made slow progress at first, but after "getting their hand in," they found it easy to make \$5 to \$20 or more a day. TRY your hand at it, and begin NOW. No matter how many premium clubs are started in any neighborhood. One hint more. In securing subscribers, "you do good, and make money." TRY IT.

[In the following table is given the price of each article, and the number of subscribers required to get it free, at \$1.50 a year, and at the lowest club rate of \$1 a year. The descriptions of the articles are given in the pages following.]

Table of Premiums and Terms, For Volume 29—(1870.)

Table with columns: No., Names of Premium Articles, Price of Premiums, Number of Subscribers required at \$1.50, Number of Subscribers required at \$1. Includes items like Short-horn Bull, Devon Bull, Cattle, Horses, Farming tools, and various household goods.

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-nine Premiums, Nos. 29 to 33, 56 to 59, 70 to 74, and 88 to 112 inclusive, will each be delivered FREE of all charges, by mail or express (at the Post-office or express office nearest recipient), to any place in the United States or Territories. The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance that may be specified. See Description of Premiums on next page.

Read and carefully Note the following Items:

(a) All subscribers sent by one person count, though from one or a dozen different Post-offices. But... (b) State with each name or list of names sent, that it is for a premium.... (c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. You can have any time, from one to six months, to fill up your list.... (d) Send the exact money with each list of names, so that there may be no confusion of money accounts.... (e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer premiums to canvassers. N.B.—The extra copy to clubs of ten or twenty is not given where premium articles are called for.... (f) Specimen Numbers, Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, as they are very costly.... (g) Remit money in Checks on New York Banks or Bankers, payable to order of Orange Judd & Co., or send Post-office Money Orders. If neither of them is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

Description of Premiums.

Nos. 1 to 28.—Thoroughbred Stock.

Several last year availed themselves of our offers of fine animals and fowls, and received rewards for their labors which were highly satisfactory. We continue these premiums this year, and will in every case give pedigree and proof of pure blood,—and all other desired information. Our arrangements are with **Jas. O. Sheldon**, Esq., Geneva, N. Y., for Short-horns; **Wm. Birnie**, Esq., Springfield, Mass., for Ayrshires; **James P. Swain**, Esq., Bronxville, N. Y., for Jerseys; **Hon. E. H. Hyde**, Stafford, Conn., for Devons; **Burdett Loomis**, Esq., Windsor Locks, Conn., for Cotswolds;—all known and reliable breeders. The Essex Pigs will be from the stock of **Joseph Harris**, Esq., Rochester, N. Y. We will give personal attention to the selection of all our stock premiums from these and from other herds and flocks known to be strictly as represented. These premiums may be of great use to the communities where they are sent, as a strictly thoroughbred animal will leave marks of improvement for many years, and we have long been convinced that only thoroughbred males should be used. It costs no more to keep a good animal than a poor one, and a whole herd may be much improved in a very short time. We especially commend these premiums to our readers. The French Fowls will be imported or bred directly from imported stock, and the others will be from strictly first-class birds.

No. 29.—Bresce's King of the Earlies, or No. 4 Potato.

The great satisfaction given to the large number of those who secured the Early Rose Potato offered as a premium last season, has led us to make an arrangement with **Messrs. B. K. Bliss & Son** to supply us with this new and remarkable variety. It was raised by Mr. Albert Bresce, the originator of the Early Rose. The flesh of this potato is white, cooks well, and is of the best quality for the table. It has proven thus far very hardy, and is said by Mr. Bresce to be fully a week earlier than the Early Rose. These potatoes will be put up in 2-lb. parcels, and sent post-paid. They can be sent before freezing weather, or in spring.

No. 30.—Norway Oats.

These remarkable oats have given such universal satisfaction, wherever the *genuine article* has been tried, that we have secured a supply to offer as premiums. Some of our best seedsmen say, "The reports about Norway Oats are all one way, and in praise of the oats." We have ourselves seen many scores of letters from all sections of the country, and all agree that these oats are superior in the quantity yielded per acre to any they have ever tried, and the quality is at least satisfactory. The yield by some is placed as high as 125 bushels to the acre, on rich land, and the average as high as 75 bushels to the acre, many yielding 100 bushels. We are to be supplied by **D. W. Ramsdell & Co.**, 218 Pearl St., N. Y., Mr. R. being the introducer of this remarkable grain. For 7 subscribers at \$1.50, or 27 at \$1, we send one peck by mail, post paid. For 17 subscribers at \$1.50, or 54 at \$1, we will send one bushel, the receiver to pay express charges.

No. 31.—Garden Seeds.—A valuable selection of 40 varieties of the best seeds for a family garden, each parcel large enough for a garden of ordinary size. This premium and the next two are put up for us by **Messrs. B. K. Bliss & Son**, Seed & Horticultural Warehouse, 41 Park Row (old *Agriculturist* office), whose seed establishment is well known as one of the

best in the country. This premium will be of great value and convenience to many, as we send the seeds post-paid.

No. 32.—Flower Seeds.—Like No. 31 this is a valuable premium. It consists of 100 different kinds of beautiful flower seeds, all in separate papers, and includes not only the finer common varieties, but many of the newer and rarer kinds that are costly.

No. 33.—Garden Seeds and Flower Bulbs.

We have taken special pains to have prepared by **Messrs. B. K. Bliss & Son** a list of seeds and bulbs of the very choicest kinds, and the most useful varieties. Though some are rare, all have been tested and are among the best. Here is an opportunity to obtain a valuable assortment of seeds, as this premium allows the selection of any that may be desired, to the amount of two dollars, from the list below. If a larger amount than this is wanted, it of course is only needful to secure two or more of the premiums, and select seeds accordingly. *Delivered free.* 1 Pkt. Early Wyman Cabbage, 50c.; ½ oz. Marblehead Mammoth, do., 50c.; ½ oz. Improved American Savoy, do., 25c.; ½ oz. Improved Brunswick, do., 25c.; ½ oz. Premium Flat Dutch, do., 25c.; ½ oz. Improved Red Dutch, do., for pickling, 25c.; ¼ lb. Bliss' Improved Long Orange Carrot, 50c.; 1 pkt. Perpetual Spinach Beet, 25c.; 1 pkt. Boston Market Celery, 25c.; 2 oz. Dewing's Improved Early Turnip Beet, 25c.; 1 pint McLean's Little Gem Peas, 50c.; 1 pkt. New Black Pekin Egg Plant, 25c.; 1 pint Carter's First Crop Peas, 50c.; 1 pint Crosby's Extra Early Sugar Corn, 50c.; 1 pkt. (10 seeds) General Grant Cucumber, 25c.; 1 oz. Boston Market Tomato, 50c.; 1 pkt. Bayard Taylor's Water-melon, 25c.; 1 pkt. Conover's Colossal Asparagus, 25c.; 1 pint New Dwarf Wax Beans, 50c.; 1 pkt. New Egyptian Blood Turnip Beet, 25c.; 1 pkt. Early White Erfurt Cauliflower, 25c.; 1 pkt. Early Simpson Lettuce, 25c.; 1 pkt. New Gurnishing Kale, 25c.; 1 pkt. Latakia Tobacco, 25c.; 2 oz. Conn. Seed Leaf Tobacco, 50c.; 1 pkt. Early Paris Cauliflower, 25c.; 1 oz. Finest Cucumber Seed, for pickling, 25c.; 1 pkt. Early Rose Potato Seed (from balls), 25c.; 2 oz. Genuine Hubbard Squash, 50c.; 2 oz. True Boston Marrow, do., 50c.; 2 oz. Turban, do., 50c.; 1 Lilium auratum or New Gold-banded Lily, from Japan, \$1.00; 1 Lilium lancifolium rubrum, Japan Lily, red, 50c.; 1 Lilium lancifolium album, Japan Lily, white, 50c.; 1 doz. Gladiolus, fine mixed varieties, \$2.00; 1 doz. Mexican Tiger Flowers, \$1.25; 1 doz. Tuberoses, Double Italian, best, \$2.00; 1 doz. Hyacinths, Double and Single in three colors, Red, Blue, and White (for fall planting) \$2.00; 4 doz. Tulips, double and single, early and late (for fall planting) \$2.00; 100 Crocus, fine varieties (for fall) \$1.00.

No. 34.—Nursery Stock, Plants, etc.

This premium can be selected in anything desired, from the catalogues of **Messrs. Parsons & Co.**, Flushing, New York, or of **Mr. F. K. Phoenix**, of Bloomington Illinois. Both are well-known, very reliable parties, having extensive Nurseries, Greenhouses, Ornamental Trees and Plants, Grape Vines, Shrubs, etc., etc. Send a stamp direct to either of them, for their regular catalogues. Select \$20 worth (or more in proportion, if more names are sent us), and we will send to the canvasser an Order for the amount on either party named above, in fall or spring, as desired.

No. 35.—Set of Field Croquet.

The game of Croquet is so pleasing, and has become so popular, that we believe many will be glad to avail themselves of the opportunity of obtaining this new Premium upon terms as easy as we propose. These sets are beautiful, and from one of the best makers in the country.

Nos. 36, 37, 38.—Sewing Machines.

"A good Sewing Machine lightens the labor and promotes the health and happiness of those at home." We offer a choice of three of the best of the leading machines, all of which have been thoroughly tested in our own families, and give entire satisfaction. While all are valuable, each has some excellence peculiar to itself. The **Grover & Baker** Machine is remarkable for the *elasticity of its stitch*, which is at the same time very firm and durable. The structure of the seam is such that, though it be cut or broken at intervals of only a few stitches, it will neither open, run, or ravel. It sews directly from two spools, without rewinding. The **Florence** Machine makes four different stitches, each being alike on both sides of the fabric. One of its special advantages is that it has the *reversible feed motion*, which enables the operator, by simply turning a thumb-screw, to have the work run either to the right or left, to stay any part of the seam, or fasten the ends of seams without turning the fabric. The **Willcox & Gibbs** Machine excels in the exceeding *simplicity of its construction*. Very little instruction and ingenuity are required to understand the few parts of which it is composed, and their use; and there is no excuse for getting it out of order, until the parts are fairly worn out. One of its strongest recommendations is the *ease with which it is worked*, taxing the strength of the operator less than other machines. All these machines have constantly increasing sales, showing the public estimate of their value. Either of them will prove a great treasure in any household,

worth more than \$500. The \$500, at 7 per cent interest, would yield, less taxes, about \$32. Most families require at least four months of steady hand-sewing a year, costing, if all hired, not less than \$24 a month, board included, or \$96 a year. With a Sewing Machine a woman can sew more in one month than in four months by hand. Here is a clear saving of \$72. But far above this. The everlasting "Stitch, stitch, stitch," bonding over the work, and loss of sleep, have brought tens of thousands to early graves. We say to every man, get your wife a Sewing Machine, even if you have to sell a favorite horse or an acre or two of land. Get the Sewing Machine any way. If you can get one through our premium list, well; but get the machine.—No charge for boxing the machines. They go safely as freight. Send for circulars, giving full instructions, to:

Grover & Baker Mfg Co., 495 Broadway, N. Y.
Florence Sewing Mfg Co., 505 Broadway, N. Y.
Willcox & Gibbs Mfg Co., 508 Broadway, N. Y.

No. 39.—Lamb Knitting Machine.

For several years we have been looking for a good, practical Family Knitting Machine, which would do different kinds of work well, and be easily understood and operated by persons of ordinary tact and skill. We think the Lamb Knitting Machine now meets the want. It sets up its own work, without casting on stitches by hand, narrows and widens without removing needles, knits a regular heel, narrows off the toe complete, etc., etc. It knits the Circular Web, Wide Flat Web, Double Flat Web, and Ribbed Flat Web. It will produce nearly every variety of Staple and Fancy Goods. So simple is it and so easy to manage, that it may be operated by a child. The Machine is attached to a common table by means of thumb-screws, and is operated by hand, with a crank. Its ordinary speed is from eight to nine thousand loops a minute, producing over two yards of plain work in ten minutes, and a pair of socks complete in half an hour. The makers claim that any person can learn to operate it by the book which accompanies each machine. Send to **N. Clark, General Agent**, 313 Washington Street, Boston, for descriptive circular and sample stocking.

No. 40.—Washing Machines.

For a long time we have annually tried many new Washing Machines, and "Doty's Paragon," which we have now used nearly five years, is the only one the "help" will use voluntarily. Send for full Descriptive Circulars to **R. C. Browning**, 32 Cortlandt St., N. Y., or to **Metro-politan Washing Machine Co.**, Middlefield, Ct. It goes cheaply by freight or express.

No. 41.—Clothes Wringing Machine.

—A very useful, time-saving, strength-saving, clothes-saving implement, that should be in every family. The wringing of clothes by hand is hard upon the hands, arms, and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the garments. We have given thousands of these premiums, with almost universal satisfaction. They are made by the **Metro-politan Washing Machine Co.**, Middlefield, Ct.

No. 42.—A Tea Set.

This premium has given the greatest satisfaction, for the last four years. There are six pieces, viz.: *A Coffee Pot, two Tea Pots, a Creamer, Sugar, and Slop Bowl*—all of beautiful, uniform pattern, new style, with raised and embossed figure work. They are not the common silver-washed articles, but the best triple plate, the foundation being white metal, so as not to show, even when the heavy silver coating may chance to be worn off in any spot by long hard usage.—These sets are made by the **Lucius Hart Manufacturing Co.**, of Nos. 4 and 6 **Burling Slip, New York City**, and are warranted by them to be of the best triple plate, and each piece bears their stamp. Mr. Hart, "the veteran Sunday-school man," has been in the same place and business for nearly a quarter of a century. We have known him and his work for many years, and take pleasure in commending and guaranteeing its value to be as represented. The amount of silver upon plated ware depends wholly upon the will and integrity of the manufacturer. We could give nearly as good looking plated ware for less than half the money.

No. 43.—Caster and Fruit or Cake Basket Combined.

—This is a new pattern, both novel and beautiful. It can be used as a large, showy Caster, with six cut-glass bottles, or be instantly changed into a complete Caster, with Call Bell, and a separate Cake or Fruit Basket, with a colored glass dish inside. Every one receiving it will be delighted. It is from the same makers as No. 42, of same metal, plating, etc.

No. 44.—Cake Basket.

—A new pattern, canoe shaped, nicely chased and very taking. It is from the same makers and of equally good quality as the two preceding premiums; a beautiful table ornament.

No. 45.—Revolving Butter Cooler.

—This is a really good and useful article. It is so arranged that a very little ice in the holder under the plate will keep butter cool and fresh for a long time on the table, even in the hottest weather. The cover revolves underneath the plate for use, and over for protection. The whole is in four pieces, which can all be taken apart for washing. From same house as last premium.

No. 46.—Ice or Water Pitcher.

—A large and ornamental article. It is of the same metal, plating, etc., and by the same makers as No. 42. For 35 subscribers at \$1.50 each, we will add a round Salver of pattern to correspond (value \$6); or, for 47 subscribers, a large 16-inch oval Salver (value \$14), large enough for two goblets with the Pitcher; and for 53 subscribers, the Pitcher, large Salver, and a pair of beautiful Goblets, silver-plated without, and gilded within (value \$38). This complete set is exceedingly desirable, though the Pitcher alone, or that and the smaller Tray or Salver, will answer a good purpose, both for use and ornament.

No. 47.—One Dozen Tea-spoons.

—These are "figured tips," Olive-leaf Pattern, all of the same metal, plating, etc., and from the same makers as No. 42. They are far cheaper than any thing we have found at half the price.

No. 48.—One Dozen Table Spoons.

No. 49.—One Dozen Table Forks.
The same description and remarks apply to these as to No. 47. We select as premiums only such articles as we can warrant in quality and price. All these articles come from the **Lucius Hart Manufacturing Co.**

Nos. 50, 51, 52, 53, 54, 55.—American Table Cutlery.

—We are glad to be able to offer really good articles of American manufacture, such as are competing successfully with the best foreign goods. **Messrs. Patterson Bros., 27 Park Row,** who supply us with these articles, are also importers of English goods. They recommend these Knives, manufactured by the **Meriden Cutlery Co.,** as equal to any Cutlery in the market, and their recommendation is a guaranty, wherever they are known. We offer four kinds of Knives, and three sizes of each kind. No. 50 have Rubber Handles, which are actually boiling water proof, so that, if they were accidentally to remain in it for several minutes, perhaps hours, they would not be injured. The Blades are of the best steel, warranted. Dessert size, with Forks, valued at \$14. For 23 subscribers at \$1.50, or 73 at \$1, we will give either the medium size or the table size, valued at \$15.50. No. 51 have Ivory Handles, are selected with great care, have Steel Blades, and are beautiful goods. Dessert size, with Forks, valued at \$18.50. For 31 subscribers at \$1.50, or 100 at \$1, we will send the medium size, valued at \$20.50. For 34 at \$1.50, or 112 at \$1, we will send the Table size, valued at \$22.50. No. 52 are made of Solid Steel and are triple-plated all over with pure silver, which will wear for a long time, while the Knife is actually indestructible by ordinary use. Dessert size with Forks, valued at \$22. For 37 subscribers at \$1.50, or 118 at \$1, we will give the medium size, valued at \$24.50. For 38 at \$1.50, or 120 at \$1, we will send the Table size, valued at \$25. No. 53 have Steel Blades, triple-plated with silver, and larger Ivory Handles, and are really splendid goods. Dessert size with Forks, valued at \$25.50. For 42 subscribers at \$1.50, or 128 at \$1, we will give the medium size, valued at \$28. For 45 subscribers at \$1.50, or 143 at \$1, we will give the Table size, valued at \$30.50. The Forks, which accompany these Premiums, Nos. 50, 51, 52, are made of genuine Albata, and warranted double-plated with coin-silver. The Forks with No. 53 are warranted Triple-plated with coin-silver. These Forks are also furnished to us by Messrs. Patterson Bros. The Carving-Knife and Fork, and the Fluted Steel are made by **The Meriden Cutlery Co.,** with best Ivory, balanced Handles.

Nos. 56, 57, 58, 59.—Pocket Knives.

—NOW FOR THE BOYS AND GIRLS!—These Premiums are among the most pleasing and useful that we have ever offered. Every boy, and girl, too, wants a pocket knife. We give them an opportunity to obtain a most valuable one for nothing but a little effort. These knives are made by **Mr. J. P. Swain,** whose work is equal to any done in this country or Europe. No. 56 is a neat, substantial Knife, with three blades and buck-horn handle. No. 57 is a still finer article, with four blades and buck-horn handle. No. 58 is an elegant Knife, with four blades and shell handle. No. 59 is a Ladies' Pocket Knife, a beautiful article, with four blades and shell handle.

Nos. 60, 61.—Melodeons.—These are excellent and desirable instruments, for the Home Circle, for small Churches, for Sunday-schools, for Day Schools, Academies, etc. Instrumental and Vocal Music in a school has a beneficial influence upon the pupils. We have seen the whole tone and character of a school improved by in-

roducing a Melodeon.—Set the pupils to work and they will raise a club of subscribers for this premium. We offer the Melodeons made by Messrs. **Geo. A. Prince & Co. Buffalo, N. Y.,** for we know them to be good. A large one in our own Sunday-school room has been in use for ten years, and is to-day just as good as when first purchased, though used from time to time by a large number of persons.—Several clergymen have obtained this premium for themselves, their Churches, or Sunday-school rooms. The clubs of subscribers were quickly raised among the members of their parishes.—Many others can get a melodeon for their home use. Send a postage stamp to the makers and get their illustrated descriptive circular. These Melodeons will be shipped direct from the manufactory at Buffalo. They can go safely by freight or by express. If an Organ should be wanted instead of a Melodeon, we can supply it for an increased number of subscribers in proportion to the value. We have given these instruments for several years, and we believe they have invariably been highly esteemed.

No. 62.—Steinway Piano.

—SEVEN OCTAVE, ROSEWOOD CASE; SOLID ROSEWOOD DESK, LARGE FRONT ROUND CORNERS; OVERSTRUNG BASE, FULL IRON FRAME, PATENT AGRAPPE TREBLE, CARVED LEGS, AND CARVED LYRE.—This is one of the most elegant Premiums ever offered; regular and only price \$650. That this magnificent instrument comes from the celebrated establishment of **Messrs. Steinway & Sons, Nos. 71 and 73 East 14th St.,** is enough to say; but it is due to these enterprising manufacturers to state that, while their pianos have repeatedly received the **PINKY PREMIUMS** by the award of the most competent judges the world can produce, at the Universal Exposition, in Paris, they received the **FIRST GRAND GOLD MEDAL** for American Pianos in all three styles exhibited, viz.: Grand, Square, and Upright. The following official certificate was signed by the President and the five members of the International Jury: "Paris, July 20th, 1867. I certify that the First Gold Medal for American Pianos has been unanimously awarded to Messrs. Steinway by the Jury of the International Exhibition. First on the List in Class X." The Society of Fine Arts in Paris unanimously awarded Steinway & Sons their only annual Testimonial Medal for 1867. The President of the Musical Department of that Society reports: "The pianos of Messrs. Steinway appear to me, as well as to all the artists who have tried them, superior to all that have been made to this day in the entire world." The best judges in America say the same. We also speak from personal knowledge, as each of our partners has one at home, and desires no better. This splendid premium may be secured by many persons. Only 540 subscribers are required to do it. Several have obtained this premium during the last year. It will pay for even a year's labor. Classes of young ladies at school might unite in canvassing, and obtain a present for a Teacher, or a Piano for their schoolroom. We shall be glad to give this premium to a large number. Send to **Messrs. Steinway & Sons** for a free circular describing it.

No. 63.—Colibri Piano.

—This is a newly invented Piano, the work of **Mr. Frederick Mathushek,** who has for many years been known among manufacturers as the author of some of the best improvements introduced into the piano. It is only 4½ feet long, 2¼ feet wide, of the square form, yet having 7 full octaves. Some eminent musicians examined it at our request; and pronounced it an instrument of remarkable power, brilliancy, and sweetness. **H. Mollenhauer,** Director of the Conservatory of Music, New York, says: "Their tone is astonishingly sweet, pure, and powerful, and so greatly superior to all others, that they must be heard to form a just conception of their superior excellence." Its peculiar construction secures improvement in sounding qualities, durability, etc. It is finished in handsome style, with rosewood case, large round corners, scroll desk, legs, lyre, etc., and will be an ornament in any parlor. **The Mathushek Piano Forte Co., New Haven, Conn.,** the makers, will send circulars, giving full particulars. Other styles are made by the same Company, but this was selected as especially adapted to the wants of many of our readers.

No. 64.—A Good Watch.

—The Watches made by the **American Watch Co., Waltham, Mass.,** have peculiarities of excellence which place them above all foreign rivalry. The substitution of machinery for hand labor has been followed not only by greater simplicity, but by a precision in detail, and accuracy and uniformity in their time-keeping qualities, which by the old method of manufacture are unattainable. A smoothness and certainty of movement are secured which proceed from the perfect adaptation of every piece to its place. The extent of the Waltham establishment, the combination of skilled labor, with machinery perfect and ample, enables them to offer watches at lower rates than any other manufacturers. Their annual manufacture is said to be double that of all other makers in this country combined, and much larger than the entire manufacture of England. The mechanical improvements and valuable inventions of the last fifteen years, whether home or foreign in their origin, have been

brought to their aid, and the presence of over 400,000 Waltham Watches in the pockets of the people is the best proof of the public approval. All of the large number of these watches which were given as premiums last year gave entire satisfaction. We have again arranged with this Company to make for us a Silver watch, jewelled, with chronometer balance, warranted by them as made of the best materials in the best manner, and in pure coin-silver "hunting" case; weight 3 oz. This watch we offer as one of our Premiums, with the fullest confidence. Upon the movement of each of these watches will be engraved, "*American Agriculturist.*" Made by the **American Watch Co., Waltham, Mass.**"

No. 65.—Ladies' Fine Gold Watch.

—This elegant Premium will delight our friends who may receive it. Our arrangement with the **American Watch Co.** (see No. 64 above) includes these beautiful gold watches. They are full jewelled, in 18-carat "hunting" cases, warranted to be made of the best materials, and possessing every requisite for a reliable Time Keeper. Upon the movement of each Premium Watch will be engraved "*Am. Agriculturist.*" Made by the **Am. Watch Co., Waltham, Mass.**"

No. 66.—Breech-loading Pocket Rifle.

—This remarkable little fire-arm weighs only eleven ounces, yet shoots with great accuracy and power from 30 to 100 yards, or more, and can be loaded and fired five times a minute. It can be carried in a side pocket, and is accompanied by an extension breech, so that it may be used either as a pistol or rifle. It is put up in a neat mahogany case, with 250 rounds of ammunition. The manufacturers are **Messrs. J. Stevens & Co., Chicopee Falls, Mass.,** and the rifles are sold at retail by **Messrs. Cooper, Harris & Hodgkins, No. 177 Broadway.** This Premium gave great satisfaction last season. Without the mahogany case, we will give the weapon, all complete, with 100 cartridges, packed in a pasteboard box, on receipt of 18 subscribers, at \$1.50 each. For a full description of this beautiful implement, with illustrations, see *Am. Agriculturist* for Jan. 1869, page 32.

No. 67.—Double Barrel Gun; or FOWLING PIECE.

—These guns are the genuine London "Twist" barrel, Patent Breech, Bar Lock, ebony ramrod, and in all respects desirable. Their calibre and length of barrel vary, and may be ordered to suit the kind of shooting to be done. They are furnished for this premium by **Messrs. Cooper, Harris & Hodgkins, 177 Broadway,** well known as one of the most reliable and best houses in their line of business, and they highly recommend this particular gun, and guarantee it in every respect. It is from one of the oldest and most favorably known English manufacturers. The price is not put on in fancy carving and plating for show, but in the gun itself. This premium includes Gun, Powder-Flask, Shot-Pouch, and Wad-Catter.

No. 68.—Roper Repeating Shot Gun.

—Bang, Bang, Bang, Bang—four times in 4 seconds! This gun just meets the wants of sportsmen. It is a splendid shooter, is fired four times without re-loading, the cost of ammunition is no more than for a muzzle loader; it is very light (8½ lbs), and the charges are water-proof. The New Model Gun, which we offer, is No. 12 Gauge, 28-inch Decarbonized Steel Barrel, close shooting attachment, with a receiver at the breech, into which four charges, each in a steel case, are placed at once, and are carried into the barrel separately, simply by cocking the piece. A Belt, 24 Shells, Wiper, Loader and Loading Block, accompany the Gun. This gun is highly recommended by distinguished sportsmen, and is easily managed even by boys. It is made by the **Roper Sporting Arms Company, Hartford, Conn.,** C. M. Spencer, Esq., (inventor of the famous Rifle), Ag't.

No. 69.—Chest of Good Tools.

—We continue through the special favor of **Messrs. Patterson Brothers, of 27 Park Row,** the offer of chests of the very first quality of tools, of kinds and prices named below. Similar tools could be purchased for half the money, but these are all A. No. 1, for practical use, and worth a dozen common articles. For this we have the guarantee of Messrs. Patterson, which is amply sufficient for us, and for all who know them. Any of these tools may be ordered of them. We make up only a single premium, which contains a full assortment for all common purposes. The tools are of regular size, and but few additions would be required for a Journeyman Carpenter. The assortment we offer is as follows: Plain chest 31×16½×16 inches, with sliding compartment \$8; Jack Plane \$2.00; Smooth Plane, \$1.75; Fore Plane, \$2.75; Hand Saw, 22 in., \$2.50; Compass Saw, 10 in., 70c; Compass, 6 in., 50c; Adz-eye Hammer, \$1.50; Hammond's Hatchet, 90c; Drawing Knife, 7 in., \$1.12; Try Square, 6 in., 65c; Bevel, 8 in., 70c; Chalk Line and Spoon, 45c; Mallet, 20c; Pair of Pliers, 5 in., 73c; Callipers, 4 in., 40c; Brace, \$2.25; 1 Auger bit, ea. ½ in., 30c; ¼ in., 23c; ¾ in., 45c; 1 in., 60c; 1 Center bit, ea. ¼ in., 21c; ¾ in., 23c; 1 in., 25c; 1½ in., 35c; 1½ in., 40c; 6 Gimlet Bits, assorted, \$1.16; 3 Giamlets in Handles, assorted, 35c;

Screw-driver Bit, 25c.; Flat Countersink, 25c.; Rose, do., 25c.; Snaill, do., 25c.; Octagon Reamer, 30c.; Taper Bit, 50c.; 1 Screw-driver in Handle, ca. 3 in., 25c.; 6 in., 45c.; 1 Gouge in Handle, ca. 1 1/2 in., 50c.; 1 in., 70c.; 1 Chisel in Handle, ca. 1 1/2 in., 35c.; 1 1/2 in., 40c.; 2 in., 50c.; 1 in., 60c.; 1 1/2 in., 80c.; 1 Framing Chisel, ca. 2 1/2 in., \$1.00; 1 in., \$1.10; 1 1/2 in., \$1.20; 1 Auger, ca. 2 1/2 in., 70c.; 1 in., 80c.; 1 1/2 in., 90c.; Set. brad awls, in Handle, \$1.35; Rule, 2 feet, 40c.; 1 Saw File, ca. 4 inch, 22c.; 5 inch, 27c.; Flat File, 8 inches, 45c.; Wound Rasp, 10 inches, 55c.; Soldering Iron, No. 2, \$1.10; Solder, Nails, etc., \$1.50 = \$5.0.

Nos. 70, 71.—Mathematical Instruments for Draughting, Drawing, etc.—Very convenient, not only for Architects and Mechanics, but for farmers and others, and for Boys and Girls. These are neatly fitted in beautiful Rosewood Cases, having dividers with flexible joints, and points, semi-circles, pencil and penholders, mlers, etc., etc. All the pieces in No. 70 are finished in brass and steel; those in No. 71 are German silver and steel. The pieces are the same in each, but No. 71 is of extra beauty and workmanship. They are useful in drawing plans of buildings, fields, etc.

Nos. 72, 73.—Dawson, Warren & Hyde's Gold Pens.—WITH EVER POINTED PENCILS, IN EXTENSION COIN SILVER CASES. Premium No. 72 contains the best E Gold Pen and No. 73 the best F Gold Pen, which is the same style, but larger. These pens are made by Messrs. Warren & Spadone, No. 4 Maiden Lane, N. Y., successors to Dawson, Warren & Hyde, whose pens obtained so wide and good a reputation that the original firm name is the Trade Mark, and is still stamped upon every pen made. We have known the makers and their goods for many years, and can recommend both to our readers. W. & S. are the largest manufacturers of Gold Pens, Silver and Gold Pencil Cases and Holders in the country.

No. 74.—Ladies' Fine Gold Pen, in Rubber Case, Gold Mounted, with Screw Extension, and Gold Ever-pointed Pencil. A beautiful present for a lady teacher or friend. Same makers as above.

No. 75.—Charles Pratt's Astral Oil supplies a great Public Want for a Safe, Reliable Illuminating Oil. It is manufactured by him and packed only in the Guaranty Patent Cans, expressly for FAMILY Use. It has more body, and an equal quantity will burn longer and give more light than other oils. The constant recurrence of explosions, fires, devastation and death, resulting from the use of what is called Kerosene Oil, but is a mixture of Benzine, Naphtua and other highly inflammable substances, the use or sale of which is an infringement of United States Law, has induced us to place this article on our premium list as a humanitarian as well as useful act. The Board of Health of the city of New York have examined scores of samples of Oil obtained from as many different dealers in this city, and nearly all have been found far below the government standard and entirely unfit for use. This "Astral Oil" is from the House of Chas. Pratt, 108 Fulton St. Established 1770. Mr. P. is a merchant of high reputation. We have confidence that he will keep up the quality of the article to its present standard. It has been tested and received the endorsement of the highest scientific authorities in the land. E. N. Horsford, late Ramford Prof. Harvard University, etc., R. Ogden Doremus, M. D., Prof. Chem., etc., Bellevue Hospital Medical College, and College of the City of New York, say of the Astral Oil:—"The Oil is remarkably clear and free from disagreeable odor, and burns with a brilliant flame, without offensive smell. A lamp filled with the Oil, and allowed to burn entirely out, does not incrust the wick. The 'flashing point' may be fairly stated to be 125° F., and the 'burning point' not below 145° F. The plan you have adopted for securing yourself and the public against adulteration of your Oil, by putting it up for sale in Cans of convenient size for family use, and sealing the cans to be opened only by the consumer, is to be commended in the strongest terms. This system faithfully carried out, meets a great public want." Dr. G. Tagliabue says: "I have to pronounce the 'Astral' Oil, the safest Illuminating Oil in the market." The Guaranty Cans are made of tin, and sealed so that none of the oil can be removed without breaking the seal, thus securing safety in transportation. The can is inclosed in a strong wooden case, and may be returned for refilling. For 19 subscribers at \$1.50, or 65 at \$1.00, we will send a case of twelve 1 Gall. Guaranty Cans, which may be distributed.

Nos. 76, 77.—Mercurial Barometers.—WOODRUFF'S PATENT, made by Chas. Wilder, Peterboro, N. H. These are the most convenient and portable Mercurial Barometers made. (Send to Mr. Wilder for a circular.) The peculiar form of Mercury cup invented by Mr. Woodruff renders these far more portable than any Mercurial Barometer previously known. Mr. Wilder guarantees the safe delivery of every Barometer given by us as a Premium, if not to be sent beyond the Rocky Mountains. The instruments are about 3 feet long, and are sent direct from the factory. We offer two forms which differ mainly in the style of case, both be-

ing supplied with *Thermometer* and *Vernier*. A Barometer is to farmers, or others on land, what it is to sailors at sea—an indicator of the weather to be looked for.

No. 78.—Buckeye Mowing Machine.—The Buckeye Mower is so widely and favorably known that we need not describe it particularly. In 1869 this machine competed at only two large trials, one at Louisville, Ky., where it received the First Prize Grand Gold Medal, and the other at Amherst, Mass., where it received Two First Prize Grand Gold Medals. Messrs. Adrlance, Platt & Co., 165 Greenwich St., N. Y. City, will send any one a circular, giving full description, engravings, etc. Many a farmer can secure this premium by a very few days' or odd hours' and evenings', canvassing for subscribers. A few can unite their efforts, each getting a part of the subscribers, and own the machine in common.—It would pay a man well to canvass for this premium, and sell it. Ten subscribers a day for 15 days would secure it.—Many can, at town meetings, fairs, elections, and other gatherings, or during evenings, easily raise the necessary club. The Buckeye Self-Rake Reaper has been proved to be a very valuable machine and is at least equal to any Reaper and Raker in the market. Those who secure this Mower can afterward secure the Reaper, which can be attached.

No. 79.—Patent Cylinder Plow.—We hear very good reports from those who have heretofore received this premium. It is an Ohio invention, but is manufactured by the well-known firm of R. H. Allen & Co., 189 & 191 Water-st., New York, to whom application may be made for descriptive circulars, etc. The kind we offer for premiums is the "Two-horse size, cutting a furrow 12 to 14 inches wide, and 5 to 8 inches deep." It is provided with a wheel, and with a "skim plow," like the double "Michigan plow." For 29 subscribers at \$1.50, or 97 at \$1.00, we will give the Heavy Two-horse, 14 to 16 in. wide, and 6 to 9 in. deep, \$19.00. For 32 at \$1.50, or 100 at \$1.00, the Two to Three-horse, 16 to 18 in. wide, 8 to 11 in. deep, \$21.00. For 22 subscribers at \$1.50 or 75 at \$1.00, the One-horse, 10 to 12 in. wide and 4 to 7 in. deep, \$15.00.

No. 80.—Collins & Co.'s Cast Cast-steel Plows.—These excellent plows are made by a patented process, of cast-steel recast (not rolled), tempered and polished like a good axe. They will scour in the softest soils, and are great favorites on the prairies. The canvasser has his choice of eight plows named in the manufacturer's circular at the same price (\$25), of which we particularly recommend "C, No. 3" for general use; "B, No. 12" for stubble only; and "E, No. 12" for turf only. Send for circular, giving full particulars, to Collins & Co., 212 Water-street, New York.

No. 81.—Comstock's New Horticultural Implements.—The *Hand Cultivator* and *Onion Weeder* will do the work of six men with hoes. It pulls the weeds and thoroughly pulverizes the soil. It is as much superior to the hoe for all small drill crops as the mowers and reapers are to the scythe and cradle. The *Seed Sower* is the most perfect small seed sower we have seen. It sows Beet, Parsnip, and other difficult seeds, with the greatest regularity, and can be easily attached to the Cultivator. The *Strawberry Cutter* takes off all the runners and at the same time cultivates between the rows. We have tried these implements in various ways, and recommend them as very useful. For 19 subscribers at \$1.50, or 65 at \$1.00, we will give the Cultivator and Weeder, and Strawberry Cutter, valued at \$12.00.—For 22 at \$1.50, or 75 at \$1.00, we will send the Cultivator and Weeder and Seed Sower, valued at \$15.00. For 27 at \$1.50, or 90 at \$1.00, and we will send all these implements complete, valued at \$18.00.

No. 82.—Page's Patent Pump and Sprinkler.—A Hand Watering Pot, a Green-hose Syringe, a light Force Pump, and Garden Engine. It is very simple in construction, light to carry, easy to operate, and adapted to many uses—convenient for washing windows or blinds, carriages, horses, watering plants, etc. Throws a small stream with considerable force about 40 feet. It is so arranged that the stream can be instantly changed to drops, spray, or mist. Manufactured by the **New England Portable Pump Company, Danvers, Mass.** Send for Circular.

No. 83.—Family Scales.—These scales, combining the advantages of counter and platform scales, are peculiarly adapted to household purposes. They weigh from 1/2 ounce to 240 lbs. They have a scoop or pan for weighing flour, sugar and other house stores, and a platform for heavier articles, and are just such an apparatus as is needed for in-door or out-door use, occupying less than 2 feet square. In cooking, preserving, keeping the weight of the grocer, butcher, etc., and in weighing meats, butter, and other produce sold from the farm, they will save much more than the cost of obtaining them as a premium. These scales are manufactured by the well-known Fairbanks & Co., No. 252 Broadway, New York, whose weighing apparatus has long ranked as the standard in all parts of the country.

No. 84.—Grandall's Improved Building Blocks furnish a most attractive amusement for children. They are very simple in construction, will stand years of children's handling without breaking, and give renewed pleasure daily. Churches, Dwellings, Barns, Mills, Fences, Furniture, etc., in almost endless variety, can be built with them, and the structures remain so firm as to be carried about. For developing the ingenuity and taste of children they are unequalled. The Blocks are put up in neat boxes, accompanied by a large hand-bill giving various designs of buildings. This is one of the most successful toys ever invented. Twenty-five thousand dollars' worth were sold last year by **Orange Judd & Co., Sole Agents.**

No. 85.—Pocket Lanterns.—A very ingenious and valuable Yankee invention—a complete *Lantern*, large enough to afford light for walking or other purposes, yet it can be folded into a parcel 3 by 4 inches long, and 1/2 of an inch in thickness; it contains 3 little sperm candles, matches, etc. Made by the **Merriam Manufacturing Company** (Julius Ives & Co., Agents, No. 37 Barclay St., New York).

No. 86.—New American Cyclopaedia.—We cannot commend this great work too highly. We wish it could be placed in every family in the country. Scholars at our Academies and Seminaries, and members of Library Associations, can easily unite their efforts and secure it. Young men should devote evenings and spare hours to canvassing for this magnificent and useful premium for their own use. Published by **D. Appleton & Co., 90 Grand Street, N. Y.** The *Cyclopaedia* is a *whole library of itself*, consisting of sixteen very large octavo volumes, well bound, averaging 800 large two-column pages in each book. They treat upon over 25,000 different subjects. It is hardly possible to name any subject, any country, any person of note, in past or recent time, concerning which pretty full information may not be found in the *Cyclopaedia*; and all alphabetically arranged for reference.—It is worth a year's effort in raising subscribers.

No. 87.—The Great Dictionary.—WORCESTER'S LARGE PICTORIAL, UNABRIDGED EDITION, containing 1,854 three-column pages, with a multitude of illustrative engravings. (The work is a large quarto volume.) Many of the most thoroughly educated men of the country consider this as far the best Dictionary in the English Language. It gives the spelling and pronunciation of every word in the language with full explanations, and as a source of general information stands next to the *Cyclopaedia*. The Dictionary can be called for at our Office, or be sent by express or otherwise, to any part of the country. It should be in every family. It is published by **Ereuer & Tileston, Boston.**

Nos. 88 to 93.—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid.—They are profusely illustrated, the Engravings used in them having alone cost about \$35,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from XVI. to XXVIII. inclusive. For ordinary use, the sets of numbers unbound will answer quite well.

Nos. 94 to 99.—Bound Volumes of the Agriculturist.—These are the same as Nos. 88 to 93 above, but are neatly bound in uniform style, and cost us more for binding and postage. Sent post-paid.

Nos. 100 to 111.—Good Libraries.—In these premiums, we offer a choice of Books for the **Farm, Garden, and Household**. The person entitled to any one of the premiums 100 to 111 may select any books desired from the list of our books published monthly in the *American Agriculturist*, to the amount of the premiums, and the books will be forwarded, Post or Express paid. \$25 or \$50 worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to *make their heads help their hands*. Any good book will, in the end, be of far more value to a youth than to have an extra acre of land on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres than he would off from 50 acres without the mental ability which reading will give him. Let the Farmers of a neighborhood unite their efforts and get an agricultural Library for general use.

No. 112.—General Book Premium. Any one sending 25 or more names may select Books from our list to the amount of 10 cents for each subscriber sent at \$1; or 30 cents for each name sent at \$1.20 each; or 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

VERMIN ON LIVE-STOCK.—We have been instrumental in supplying farmers with great quantities of *carbolic soap* for destroying vermin of all sorts—ticks, lice, and fleas, besides scab and mange. In no case where this article has been used and applied according to directions has it failed of producing a perfect cure. Before animals are taken up for the winter, they should be cleansed, and their stalls and pens should be showered and washed with strong carbolic suds.

The Barn at Ogden Farm.

(Continued from page 374.)

As it was not convenient to give the plans of the barn with the elevation, they are placed here. Fig. 1 is the manure and root cellars.

Fig. 2 shows the plan of the cattle floor, which contains stalls for two yokes of oxen, good stables for four horses, two box-stalls, and stalls



Fig. 1.—PLAN OF MANURE AND ROOT CELLARS.

for 39 cows. Fig. 3 shows the upper or hay floor, which is 80 feet by 100, and has three rooms and a recess for tools, built in such a manner as to occupy only the height required for these purposes, the space above them being available for the storing of hay, etc. Fig. 4 shows a longitudinal section of the barn on a line drawn through the front part of the horse-stalls. Fig. 5 gives a cross-section of the barn. The references to the letters on the plans make any other explanation of them unnecessary.

This barn was built with reference to keeping the cattle in stalls throughout the year, and combines many facilities for carrying on the necessary operations of feeding, etc., with the least possible expenditure of labor. For soiling in summer the green feed is hauled in a cart on to the upper floor of the barn, dropped through a hatchway into a car on a railroad below, and on this it is run along the gangway between the heads of the cattle, being thrown to them on a floor on the same level with that on which they stand. Running along in front of the cow stalls is a series of iron drinking troughs, one for each two stalls, connected by one-inch galvanized iron pipes, which pass from the bottom of one trough to the bottom of the

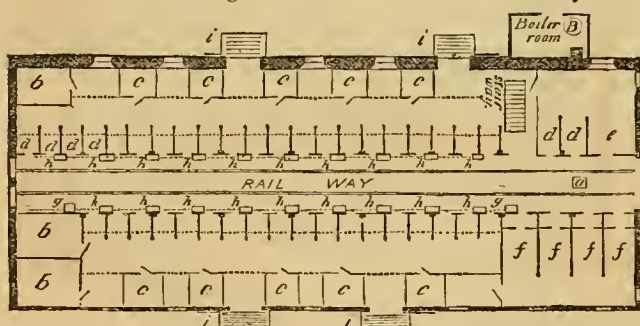


Fig. 2.—CATTLE FLOOR.—a, Trap to Root-cellar; b b b, Loose Boxes; c c, Calf Pens; d d, Cow Stalls; e, Ox Stalls; f f, Horse Stalls; g g, Water-tubs; h h, Watering Troughs; i i, Slopes to Enter.

from a wooden tub standing near it, which is filled from a tank on the floor above, water from a distant well being thrown into this by a wind-mill and force-pump. By adjusting the stream flowing from the storage tank, so as to keep up a constant flow from the tank to the outlet-pipe at the far end of the series, a constant supply of fresh water is furnished without labor and almost without attention. The floor on which the hind feet of the cows stand, and for a little distance to their rear, is made of two-inch plank, six inches wide, and placed at a distance of one and a quarter inches from each other. The urine and the smaller droppings fall directly through the openings. The manure that is not thus disposed of is thrown with shovels through scuttles in the floor near the outer wall. For winter use this barn is equally well arranged. A cutting-machine, driven by a steam engine,

reduces the hay to a state of chaff; it is then thoroughly moistened with water, of which an ample supply is at hand, sprinkled with bran or meal, and mixed with sliced roots, and then

packed into the steaming chest, which has sufficient capacity to cook one day's supply for all of the stock the barn can accommodate. The storage capacity of the hay floor is about one hundred and twenty tons, and the stowing-away is done by the aid of a Palmer hay-fork, working on hooks in the roof. It will be seen that in this barn there is no pitching up, except what is necessary for throwing the manure into the carts, by which it is to be drawn to the field. The hay is stowed in its place by horse-power. After cutting, the chaff is carried by an elevator to the floor over the feed-room. All feed given is dropped through a trap-door to the feeding-car, and the manure again drops into the cellar. Every-

thing is so arranged that all the operations are under the easy control of the manager; and it is difficult to see where in the arrangement any

labor, either of work or supervision, could have been saved. The barn is built of the best mate-

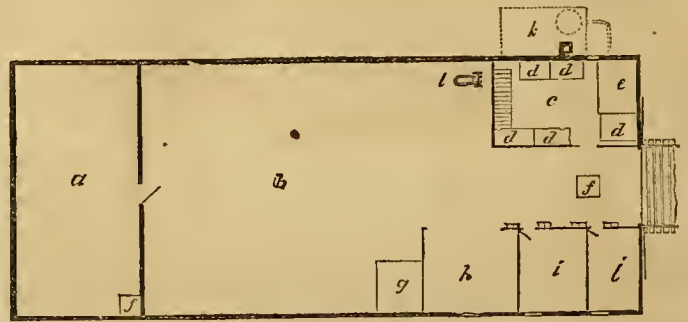


Fig. 3.—HAY FLOOR.—a, Straw Loft; b, Hay-room; c, Feed-room; d d, Grain-bins; e, Steaming Vat; f f, Hatches; g, Water-tank; h, Tool-room; i, Work-shop; j, Bed-room; k, Boiler-room; l, Hay-cutter.

rials, amply secured, where necessary, with wrought-iron work; the roof is supported on trusses, so that the hay floor is cut up by no posts; and every convenience that could be suggested by economy alone has been introduced. At the same time, nothing has been expended for ornament; and, by a strict adherence to this principle, the entire cost of the barn, its machinery and its approaches, has been brought within \$7,500—a sum on which the saving of labor alone, or the perfect protection of manure alone, would almost pay the interest, while the barn affords complete shelter for produce, implements, and stock. The ventilation is managed at present by means of the doors and windows—the cattle floor having eight sliding doors, 5 feet wide and 8 feet high, and about a dozen windows, all of which may be opened. In summer, everything is kept open day and

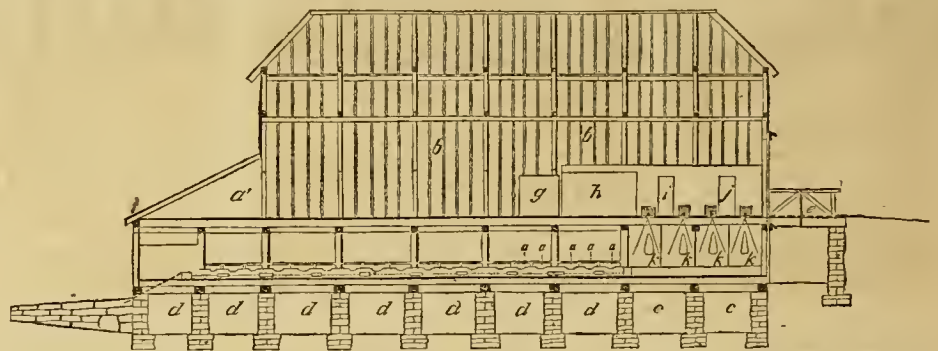
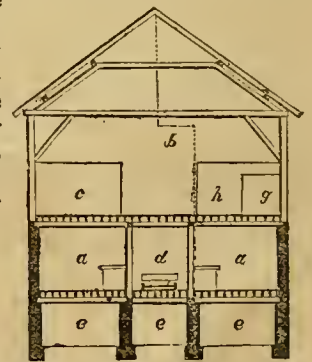


Fig. 4.—LONGITUDINAL SECTION.—a a, Cattle Stalls; a', Straw Loft; b b, Hay-room; c c, Root-cellar; d d, Manure Cellar; e, Bridge; g, Water-tank; h, Tool-room; i, Door to Work-shop; j, Do. to Bed-room; k k, Horse Stalls.

night, except during the prevalence of high winds; and even in winter, doors and windows are opened on the leeward side of the building. For winter, the ventilation will be effected by four flues passing from the manure cellar to ventilators in the roof. As the cellar has no communication with the outer air, the flues can be supplied only by the descent of air through Fig. 5.—CROSS-SECTION.—a a, Cattle Stalls; b, Hay-room; c, Feed-room; d, Passage with Car for Feed; floor behind the e c, Manure Cellar; g, Water-tank; h, Tool-room.



adjoining one. The last trough of the series has an overflow pipe, passing out near the top. The first one is supplied with water

Products of the Pine Forests.

Turpentine, rosin, tar, and pitch, are largely used in various trades, as well as for many do-

the north-eastern boundary of North Carolina, along the Atlantic coast to Florida, across that State to the Gulf, and thence to Louisiana, in a belt averaging one hundred miles in width.

box is cut in the tree, as near as possible to the surface of the ground. The shape of this "box" will be seen in figs. 2, 3 and 4. The box cutting commences about the 1st of December,



Fig. 1.—HAULING TO MARKET AND HACKING.



Fig. 2.—DIPPING THE CRUDE TURPENTINE.

mestic purposes, yet we doubt if the majority of those who employ them know how they are produced. Similar products are furnished by other pines as well as by other members of the

The soil is sandy, with an understratum of yellow clay. This whole region is cut by deep, sluggish rivers, and immense swamps, almost all underlaid with marl. The manufacture was

and continues until March—perhaps a few weeks longer if the spring is late. A hand can cut from 100 to 150 boxes per day; the price now is from one to one and a half cents per box, of



Fig. 3.—CHIPPING THE BOX FACE.



Fig. 4.—GATHERING THE SCRAPE.

Pine Family, but the great supply comes from the Long-leaved Pine (*Pinus australis*), of the Southern States. One of our artists has sent us a series of sketches from the pine regions,

first commenced in North Carolina, and that State still supplies by far the largest proportion of the product. The first step is to obtain the Crude Turpentine. This is the natural juice of

from one quart to half a gallon in capacity. After cutting, the boxes are "cornered" by taking out a triangular piece at each end of the half moon. This is the commencement of the

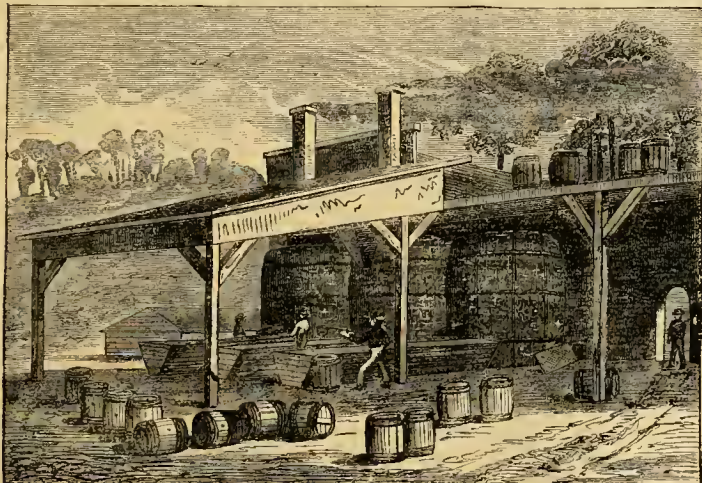


Fig. 5.—THE DISTILLERY AND ROSIN VATS.



Fig. 6.—BURNING A TAR KILN.

and a friend, familiar with the processes of manufacturing the products, has furnished us an account of them, which is given substantially as follows.—The Long-leaved Pine grows from

the pine tree, and is sometimes called White Turpentine, and Gum Turpentine. It is a mixture of the volatile oil known as Spirits of Turpentine, and of Rosin. A half-moon-shaped

regular season, and the boxes are now all tasked off. A "task" is usually 10,000 boxes, but I have known hands to tend 18,000. These must be cornered once, and "hacked" about six

times, from the first of spring until into November. The dipping (shown in fig. 3) is done by task work, too, so many barrels or boxes per day being a task. Two dippers generally attend one hacker. Hacking is the making a

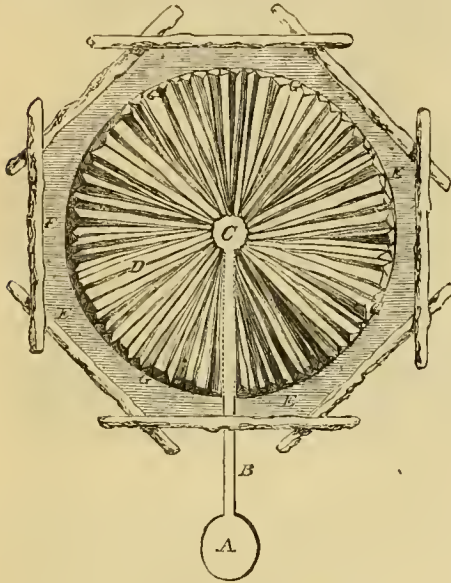


Fig. 7.—DIAGRAM OF A TAR KILN.

groove-shaped cut on each side, downward, to the centre of the half-moon. These grooves can be seen in all the cuts. The "hacker" is shown in fig. 8. It is used with a downward stroke, and has at the lower end of the handle a weight of lead or iron, to give great impetus to the blow. The barrels for filling are placed at intervals through the woods; the dipper gathers his gum in a rude bucket, and empties it into the barrels, which, when full, are hauled off. A frequent mode of hauling is seen in fig. 1; the same cut shows a primitive but cheap mode of "rolling" tar to market. Both articles are frequently rafted to a seaport between sticks of hewn timber.

The first year's operation produces "virgin dip," the second "yellow dip," the third some common yellow dip and scrape; then the further product of the trees is all "scrape." The virgin dip is, when carefully gathered, a honey-like gum, of whitish appearance. From it are produced No. 1, pale, extra, and window glass rosins. It yields

about 7 gallons of spirits, and not quite $\frac{3}{4}$ of a barrel (280 lbs.) of rosin to the barrel (280 lbs.). Yellow dip yields over $\frac{3}{4}$ of rosin, and about 6 gallons of spirits to the 280 lbs. of gum. Scrape yields about the same. "Scrape" is the gum which gathers on the face of the tree or box when worked up three, four, or more feet. It is a white, cheesy-like substance. The operation of chipping the box face and gathering the scrape is seen in figs. 3 and 4. With care a very light rosin can be made from it. The "round shave," an implement used in chipping, is shown in fig. 9, and the "scrapper" in fig. 10.

The operation of distilling the gum is carried on in copper stills of a capacity from ten barrels

up to sixty—the ordinary size being twenty and thirty barrels. They are bricked up at the sides, and the fire strikes directly on the bottom. The top has a large hole for the "cap," which connects with the worm for condensing the spirits, and a small hole through which the "stiller" examines the state of his charge, and lets in water as it may be needed. The rosin, being a residuum, is let off on one side into vats, from which it is dipped into barrels to cool. The rear of the stills and the rosin vats are shown in fig. 5. Probably the largest distillery in the country is at Wilmington, N. C.

The profits of this business depend entirely upon the vigor with which it is pushed, and the economy with which it is conducted. A store usually accompanies, and adds to the profits of a country distillery. A task of 10,000 boxes may safely be calculated to yield two hundred and fifty barrels of virgin or yellow dip in a season. If convenient to railroads, cities, or towns, the trees, when worked out, are cut into cord-wood, quantities of which now find their way to New York. In trees deadened by fire, stumps of trees cut down when the sap is up, and old boxed trees left standing, a peculiar transformation of the wood takes place; all its pores become filled with pitchy matter, it increases greatly in weight, and will take fire almost as readily as gunpowder. In this state it is called "light-wood," because it is used for kindling, and with the poor as a substitute for candles or other light. This wood is the source of tar. The wood is split into billets 3 or 4 feet long, and about 3 inches in diameter. To form a tar kiln the wood is piled concentrically, each layer projecting over the lower a little until a desired height is reached, this encircled with logs, and covered with clods, as shown in fig. 6. A kiln yields fifty, one hundred, or more barrels of tar, according to its size. Pitch is tar boiled down until all its volatile matter is driven off. The manufacture of tar is chiefly carried on by the poor whites and negroes. It is but seldom the object of regular work, being rather a job for odd times. The kiln burning is generally a frolic, or was in olden time.

Few sights have in them more of sombre grandeur than a large tar kiln at night. Its immense columns of slowly ascending smoke are now and then illuminated by the leaping forth of a tongue of flame. The wild cries of the men in their efforts to cover it quickly with earth add to the wildness of the scene.

A diagram of the construction of a tar kiln is given in fig. 7. A is the pit to receive the tar which flows through the gutter B, from a hollow space C, in the kiln, into which it drips from the burning wood. D, strips of light-wood laid with their inner ends sloping towards the centre. E, E, E, space between the green pine logs F, which inclose the whole. This space is tightly packed with turf, and the top of the kiln is covered with the same material, except at G, G, where the fires are first placed.

The production of the various products of the pine forests is not now so great as before the war, and the supply of pines is growing each year very visibly less. The Long-leaf Pine does not reproduce itself, except after many years. Disease and insects have destroyed many trees, and all through the Eastern Carolinas can be seen vast tracts of land worked out and abandoned, or devastated by the causes just stated. Hundreds of thousands of dollars' worth of trees have been thus destroyed.

The engravings accompanying this article are from sketches drawn from life by our special artist, Mr. C. C. Burr, of Wilmington, N. C.

Walks and Talks on the Farm—No. 70.

One of my neighbors was taking a load of wheat to the city this morning and stopped at the pump to pour some water on to the wheels of his wagon. I told him if he would put petroleum on it would swell up the wood just as well as water and would not dry out. I do not know how I could get along without petroleum. My implements and machines get left out in a manner I do not approve, but am incapable at present of preventing, and if it was not for petroleum the rain, sun, and air, would warp and crack and swell and shrink and ruin them. I keep all the woodwork saturated with it, and give the iron an occasional touch with it. We have not yet found out half its virtues.

I have received several letters approving of my remarks in regard to the necessity of improving our harrows. I am glad so much attention is directed to the subject. Mr. Ball, of Rens. Co., N. Y., says he is using a Yeddes harrow with 30 teeth of $\frac{3}{4}$ iron, with timber 3 inches square. He sometimes bends a tooth, but not often. He proposes to make a Scotch harrow, with bars 2 inches wide by $2\frac{1}{2}$ inches deep, and 10 inches from centre to centre, with six teeth, 10 inches apart, in each bar, of $\frac{5}{8}$ steel, which he thinks will be quite as stiff as $\frac{3}{4}$ iron. Of course the finer the teeth and the closer together, the more thoroughly will they pulverize the soil, provided the harrow is heavy enough to keep them in the soil, and the teeth are not so close as to cause the harrow to clog. It is not necessary that the teeth should go very deep into the soil, for when this is required, a cultivator is a much more effective implement. Since the general introduction of the drill, we seldom use harrows to cover the seed. Its principal use is to pulverize the soil more thoroughly than it can be done by the plow and cultivator. When the sods do not interfere, we can make a very fine seed-bed by first plowing, then harrowing, then rolling, then cultivating, and again harrowing with a finer harrow. But of course a good deal depends on the character of the land. Some light soils do not require half this labor, while the clays frequently require a good deal more. It is fortunate that those soils which require the most labor to get them finely pulverized, are the very soils most benefited by the operation. Mr. B. asks "How would it do to set the steel teeth slightly raking, say one inch in five, and have the harrow so as to hitch to either end. Where it would answer to have the teeth slanting forward, they would cut better than when perpendicular. Where there was rubbish that the teeth would gather, hitch to the other end." This plan is well worth trying, but some means of keeping the teeth from being driven up when they strike a hard lump or stone would be required.

I suppose in less than a dozen years we shall do our plowing, cultivating, harrowing, etc., by steam, but in the mean time, farmers who keep six, eight, or ten horses, want implements that can be used with four horses abreast. I am tired of seeing a strong, active man walking over the clods after a light pair of horses, when he could just as easily drive four, and do double the work, with no more fatigue to himself. We complain a good deal of the high price of labor, but do very little towards making it more effective. Even in the busy season of haying and harvest, I know farmers who actually waste half their time! Three men will go into the

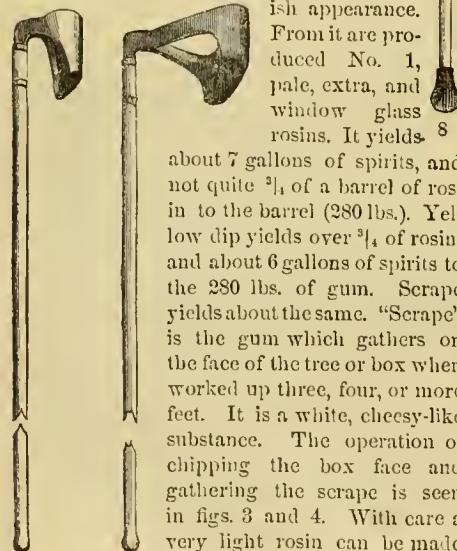


Fig. 9. Fig. 10.

field for a load of hay, two pitch and one load, and those two men will wait longer between each cock for the loader to start his team than it takes them, or even one man, to pitch the hay! I have, on several occasions, timed them—watch in hand—and found this to be the case. They put on a little over half a ton of hay, and then drive it to the barn—all the men going back and forth.

Most people overestimate the weight of their loads. I thrashed my wheat this year as we drew it from the field. A man and a team from a neighboring farm helped us to draw, and I told him I wanted big loads. He brought on what he thought "as heavy as a team ought to draw." I asked him how much he thought his team could draw at a good pace. "Two tons," he said. He pitched off the load to the machine and had on nine bushels, or say 540 lbs. of grain, and certainly not over 450 lbs. of straw. So that his "big load" did not weigh half a ton! And yet that same man would think nothing of drawing a cord of green beech wood, weighing about three tons. The biggest load thrashed out only eighteen bushels, and consequently did not weigh over one ton.

We drew in with two teams and three wagons. As soon as the wagon was unloaded, the man that carried away the grain pulled it out of the way, the other load drove up, and the team was attached to the empty wagon and taken to the field for another load. The machine sometimes thrashed three bushels in two and a half minutes, and averaged a bushel a minute, but we had no trouble in drawing the wheat fast enough. Later in the day, however, I put three teams to draw, and four wagons, with another man, to pitch. I did this for the sake of getting up the rakings, which is always slow work. It was Devil wheat, and I had five hundred and seventy bushels from eighteen acres, or thirty-one and three-quarters bushels per acre. The wheat round the fences was killed out by the snow, and there were about two acres in the field, where a stone underdrain got choked up, that yielded not more than half a crop; and on the whole field the Hessian fly did considerable damage. Nevertheless, I beat the Deacon, as he had only twenty bushels of Amber wheat per acre. But I am not at all satisfied. It will do, perhaps, for a new beginner on a run-down farm, but I want forty bushels per acre as an average crop, and fifty bushels in good seasons. Fifty-six bushels of white wheat per acre have been grown in this county, and we have just as much sun now as we had then, and it is a pity if science and art cannot make land as rich as it was made by nature.

My "fall-fallowed" barley did not turn out as well as I expected. Last year I had one field that yielded over fifty bushels per acre, and this field looked a great deal heavier. Last year the season was very dry and hot, this year very wet and cold, and I have an idea that crops in a wet season never turn out as well as they look. The field contained ten acres, and we had four hundred and thirty bushels of barley, with six loads of rakings still to thrash. This may bring it up to the desired five hundred bushels, but it is rather doubtful. Three or four acres were badly lodged, and we lost considerable in harvesting it. We did not sow quite fifteen bushels on the ten acres, but it was thick enough.

Another field of fourteen acres, after corn, gave four hundred and forty-eight bushels, or thirty-two bushels per acre, with a few rakings yet to thrash. I had barley on this same field

five years ago, and the yield was only twelve bushels per acre. This is, so far, encouraging, and the improvement is due to nothing but stirring the soil. The field was in corn last year, on a three-year-old clover sod. It was only a fair crop. We cultivated it as often as was necessary, say once a week or ten days, until the first of August. Then as soon as the corn was cut, and while the stooks were still in the field, we ran a two-horse cultivator between the rows of stooks, and after the stalks were removed, say the first or second week of November, we ran the cultivator the other way, using four horses abreast, and setting the teeth to run as deep as the land had been plowed in the spring, and perhaps a little deeper. It was plowed once the next spring, and sown to barley.

J. J. Thomas writes me: "There is one point dwelt upon in the 'Walks and Talks' which I like very much. This is, the practice of summer-fallowing to eradicate weeds. We are a weedy nation. There are, doubtless, growing this day, within the limits of these United States, in farm fields, enough weeds to load a line of wagons around the globe, according to estimate. We must induce our people to clear them out,—broadcast,—not so much by hand-hoeing and finger work."—The real difficulty lies in the indisposition of nearly all of us to do anything *now* that can be postponed. We summer-fallow because that is a part of ordinary farm routine; but we postpone breaking up the land as late as possible. A "summer-fallow" is often nothing more than a field of clover plowed, at the earliest, in May, and more frequently not until June or July, and then the weeds kept down by the use of the barrows and cultivator. If the land is plowed in August or September, just before sowing the wheat, it is considered something extra. Excellent crops of wheat are often raised in this way, but I never liked the plan. It does not cause enough of the seeds of weeds to germinate. The harrows and cultivators seldom go more than three or four inches deep, and the three or four inches of the old sod lie undisturbed underneath. This is turned up at the second plowing, just previous to sowing the wheat, and the seeds it contains will then germinate, but too late to give us any chance to kill the weeds. They have undisturbed possession of the soil for three or four years—first in the wheat and then in the grass. In the wheat they go to seed, and not unfrequently in the clover and grass also. And when this sod, three or four years hence, is plowed up and planted to corn, it is no wonder that we have to resort to "hand-hoeing and finger work." All this is the result of our unwillingness to plow the land the fall previous.

If I was going to summer-fallow a piece of land next year for wheat—say a three-year-old clover sod—I would plow it this fall, as early as convenient; then cultivate it in the spring, and as soon as the sod was rotted, say by the time we were through planting corn, cross-plow it and harrow thoroughly; then a week or two later put on a four-horse cultivator, running it as deep as possible, going both ways, and as often as was necessary to tear the land all to pieces; if cloddy, roll and harrow after the clods had been softened by a shower; put four horses abreast on the roller, and fasten the harrows behind, and go over the land until all the clods are broken up. If the work has been thoroughly done, the weed seeds will start by the million. The more the better. It would be a lucky thing if we made the land so mellow

that every seed in it would germinate. The young plants are easily killed if taken in time. Keep the cultivator going. Better hire an extra man in haying and harvest rather than let the horses lie idle while the weeds are growing in the summer-fallow. Thistles, especially, must not be allowed a breathing spell. They are very tenacious of life, but in our splendid climate we ought to be able to kill them in one season. After harvest plow the field again. This may give us another crop of weeds. If so, all the better. The cultivator, run both ways, will make short work of them. Drill in the wheat about the 20th of September, and seed down with a peck of clover seed per acre in the spring. If good strong land, well drained, naturally or artificially, I should expect thirty bushels of wheat per acre, and clover that would have to be cut early in June the next year, or you will not be able to cut it at all; and then four, five, or six bushels of seeds afterwards. Mow it or pasture it the next season, and then after you are through sowing the winter wheat, draw out and spread fifteen or twenty loads of rich, well-rotted manure per acre, that was piled in the spring, and turned over two or three times, to cause the weeds to germinate. Spread the manure evenly, and let the grass grow through it, and the next spring plow under the grass and manure just before you are ready to plant, and drill in the corn as fast as you plow and harrow the land. Cultivate it thoroughly, and there will be little hoeing to be done, but a good deal of husking. All this is the result of plowing the land this fall. Neglect this and you cannot possibly get the full benefit which ought to be derived from the summer's cultivation. We fail to avail ourselves of the element of TIME,—one of the most important forces in agriculture. The fall-plowing gives us six months more time for the oxygen of the air to decompose the soil, and for the freezing and thawing to disintegrate and mellow it.

I have just let the job of building a hundred rods of stone wall at \$1.37½ per rod, and the men board themselves. It is too much. In old times the same work was done for less than half the money. But I have found to my cost that it is better to pay enough to secure the best men. One man laid me a wall at \$1 per rod, and in two years it had to be laid over again. Another man built me some at 87½ cts. a rod, but cheated me woefully. I did not understand the tricks of the trade, and he availed himself of my ignorance. The trouble seems to be in not lapping over the stones, and binding them properly. "I could cheat any man," said an old builder, "unless he watched me all the time." And I presume this is the case. The only remedy seems to be in getting men who have a reputation at stake. I have made up my mind to pay enough to secure the best wall builders I can find. It is a great nuisance to have a wall tumble to pieces in a few years. By the time we have got out all the stones from the land that come within reach of a plow running nine or ten inches deep, I shall have stones enough to fence the whole farm into twenty-five or thirty-acre lots; and ten fields certainly ought to be enough on any farm.

If farmers in other sections have been as late in haying as they were here, Timothy seed will be cheap next year. Half of the hay was not cut until the seed was dead ripe. To feed out Timothy seed worth \$3.00 or \$4.00 per bushel of 45 lbs. is poor economy, even if the horses

masticate the whole of it. Better thrash out the seed from overripe hay and buy oil-cake or oats with the money obtained for it.

I never before saw such crops of oats as we had this season. It has been tough work harvesting them. I was obliged to let mine get dead ripe before we could cut them with the machine. We cradled round the field, and then started the machine, but it clogged so badly that we had to give it up. I let them stand a week longer, until there was considerable danger of shelling, but the straw at the bottom was still green. To my great relief, however, I then found that the machine would cut them and rake them off into bundles. We put four horses on to the machine and had no further trouble. It is unwise to overtax the team, for one man can drive four horses as well as two, and the machine works far better when there is power enough to keep it going at a good steady pace. The driving wheel, too, is not as likely to tear up the soft ground when it goes steadily as when it is jerked by an overtaxed team. This has been the great trouble the past harvest.

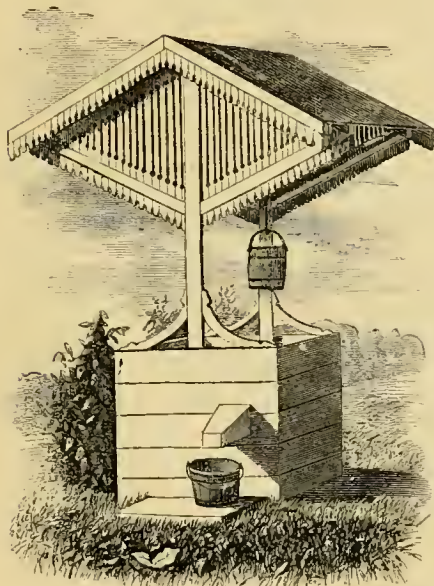


Fig. 1.—WELL-CURB.

Well-curbs and Well Covers.

The drought which prevailed during a portion of the summer in the vicinity of New York, while our neighbors, only a few hundred miles away, were having so much rain that, for the time, they had ceased to regard it as a blessing, lowered and dried our springs and wells to an unusual degree. This offered an opportunity to clean out and deepen wells not to be neglected. If we had each to clean out his own well in a dry time, the water would not taste so well as usual, unless we knew the work was thoroughly done, and the subsequent accumulation of dirt prevented. Nothing is easier than to fall into a hole, if the hole stands ready, and a hole is ready on most of our farms for mice, moles, toads, insects, leaves, sticks, and a thousand other agreeable and disagreeable things, gold spectacles and tin pails. There is a well in our neighborhood made with 30-inch cement tiles; the uppermost tile rises a foot above the ground. Around this is a plain wooden curb, 3½ feet square, and 3 feet high (see fig. 1). From the

middle of opposite sides rise two posts, about 8 feet high. These not only support the pulley upon which two buckets hang, but a roof which extends a foot in every direction beyond the curb. This roof has two rafters on each side, which are attached to the posts, and supported



Fig. 2.

by braces of nearly equal length with the rafters. Two-and-a-half-inch slats, cut out so as to make an ornamental figure, represented in fig. 2, are nailed on close together upon the inside of the rafters and braces. The roof has open gables, adorned by a simple sawed ornament, made of the ends of similar slats. The effect is very graceful and pretty. The well will be likely to keep clean a long time, and certainly no small animals can easily get in. In the same vicinity there is a very attractive rustic well-curb on a similar principle, made of rough red cedar with the bark on. See figure 3. The curb is of boards, to which cedar sticks, split in half, are nailed, making figures of regular lines. The braces are attached to the posts so as to appear like regular branches. The roof in the case to which we refer is of simple boards, with rustic ornamentation on the gable ends; but it might very well be of bark, nailed upon boards, or of thatch, and either would add to the rustic effect.

After all, these simple roofs, even when combined with a well-made curb, set snug upon a flagging or cement base, are not perfect for keeping out dirt that blows into wells. A contrivance to effect this is shown in fig. 4. It consists of two simple lids, which shut together at an angle of 45 degrees or less. In making such lids the boards should be nailed to 3x4 scantlings at one end, and narrow cleats at the other. Inserted in the scantlings are two stiff sticks of proper length, set at different angles. They should stand, when the lids are together, six or eight inches apart, with the ends lapping at least six inches. On connecting these ends with a short chain or cord, both lids will move together in opening or shutting, so that one can open the well with one hand with the greatest ease. This cover is adapted to any kind of open well, but particularly to those furnished with the old-fashioned well-sweeps. A notch cut in each cover will allow the bucket to

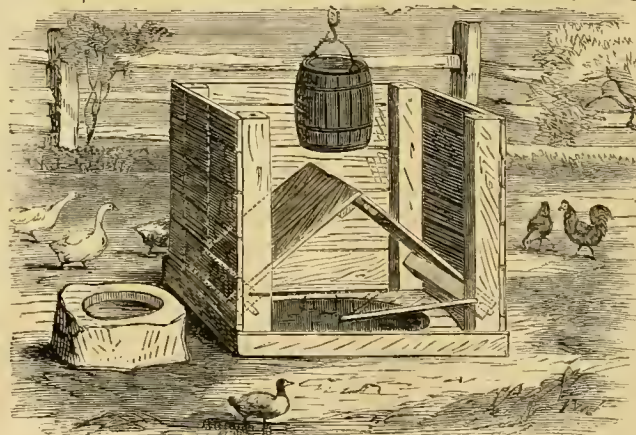


Fig. 4.—COVER FOR WELLS.

stand in the well while the pole or chain passes through a hole made by cutting a notch in each of the lids, and the well remains covered.

Why Don't the Boys Stay? Will Farming Pay?

"Uncas," who is a farmer's son and has left the farm for the town, thus writes about farming from his point of view: "Boys generally like to be where there is something going on, different from the farm, and the attractions of the city are enticing. Many young men, I think, are driven from the farm by the stick-to-it-iveness of the parent to old-style farming. Young men nowadays like to see and be seen, and dress as well as their city neighbors; but the old-style farming don't allow of a great surplus in the treasury, and boys seek other business.

I am a farmer's boy, and have worked on the farm, although at present engaged in the city. My father is attached to old-fashioned farming—by this, I mean the way our fathers did—and is, as I think, a little old-fogy, and, withal, rather strongly set in his way, millstone-like, while he calls me a book farmer, and thinks if I should run the farm I would run it into bankruptcy in less than a year. This difference in our views brought me to the city to live.

The question, Will farming pay? has not been settled in my mind by practice, only in theory,

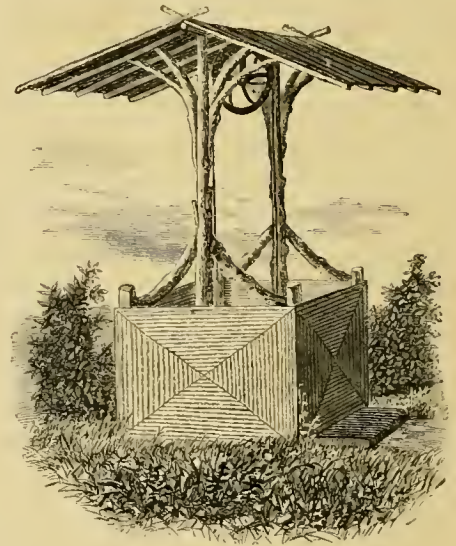


Fig. 3.—RUSTIC WELL-CURB.

and consequently I can only speak theoretically. I am convinced that under the system generally pursued by most farmers, it is not a great paying institution, but if the same attention and energy, with the same determined spirit to make it pay, be given to it, that is given to other pursuits, I don't see why it won't pay. Every man, woman, and child, is dependent upon the produce of the farm for sustenance, so that there will always be a demand for what the farmer raises. One principal need of the farmer in order to be successful is manure, and a farmer should make and save all he can. A barn with a manure cellar, with water-tight tanks for saving all the liquids from the stables, as well as those from the sink spout, many loads of fertilizing material, which with a great many go to waste, might be made of service by stalling the cows in summer, and placing muck under them. With the successful manufacturer, everything is made to count, and even the dust of the waste is sold for manure. With the farmer the fragments should be gathered up, that nothing be lost. Another great need of the farmer is some knowl-

edge—the more the better—of the science of agriculture. A well-chosen library of works on agriculture, books written by men of practical experience, as well as some of the agricultural papers of the day, is of great value. With this theory, and the means to carry it out, I think I could make farming pay. What think you?"

[You are right. Make the farm earn its own improvements and you will be happy. If you know an investment must pay at least 10 per cent, go in for it. If it will pay 20, you may borrow money to make it. If you wish to make farming pay, spend no money for extras; or, if you do so, do not charge it to the farm.—Ed.]



Fig. 1.—BAR-MUZZLE FOR CRIBBERS.

Cribbing Horses.

Cribbing is not a disease but a habit, which no doubt is as agreeable to the horse as it is disagreeable to his owner. This evil is probably brought on by the horse standing in his stall with an empty stomach and nothing to eat; by slight indigestion; flatulency of the stomach, which is relieved by an eructation of gas; by imitation; and perhaps by simply accidentally resting the teeth upon the crib and experiencing the agreeable sensation. Taken very early it may be cured. The horse should at once be put in a close box stall where there is nothing upon which he can rest his teeth, not even an upright post. (After the habit is formed a horse will often crib upon a horizontal iron bar.) His feed should be given him upon the floor in a half-barrel tub or a basket. When taken out, if it is necessary to hitch him, the arrangement figured in April, 1868, page 139, should be used. This is a rod about two feet long, attached to the hitching rein, and made fast to the bit-ring when the horse is hitched, so that he cannot get his head to the post. When a box stall cannot be provided, it will

pay, we think, to use the bar-muzzle, shown in fig. 1. This, if properly made, allows the horse to eat any kind of fodder, while it perfectly prevents cribbing, as will be apparent to any one examining the illustration. A good blacksmith will make a neat one, which should be as light as possible consistent with strength. It is attached to the halter. The expense of this bar-muzzle will prevent some persons using it. A less effective preventive, which is, nevertheless, good for any but confirmed cribbers, is a strap to go around the neck, in which are several sharp-pointed nails, arranged as shown in fig. 2, so as to stick into the throat when the horse is in the act of cribbing. These nails, or steel points, are protected by a piece of stiff leather or a steel spring attached at one end to the strap, and having a slot cut in the other through which the strap may slip. This piece of leather is attached, soaked, bent into the form desired, and hammered stiff while drying; when dry, holes are cut for the points to come through. We have found that a horse in whom the habit was not a confirmed one, would stop when a small cord was tied tightly around the throat. A farmer of experience assures us that he has completely broken a colt of the habit by standing out of sight with a heavy whip and bringing down the lash soundly whenever he tried to crib in the least. Strips of sheepskin are useful with beginners, nailed upon all those parts of the crib or stall where they can rest their teeth. Cribbing has the effect to re-

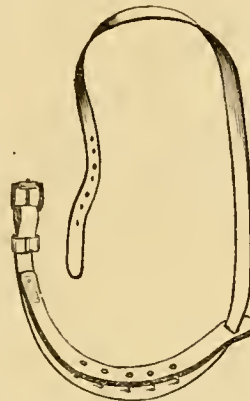


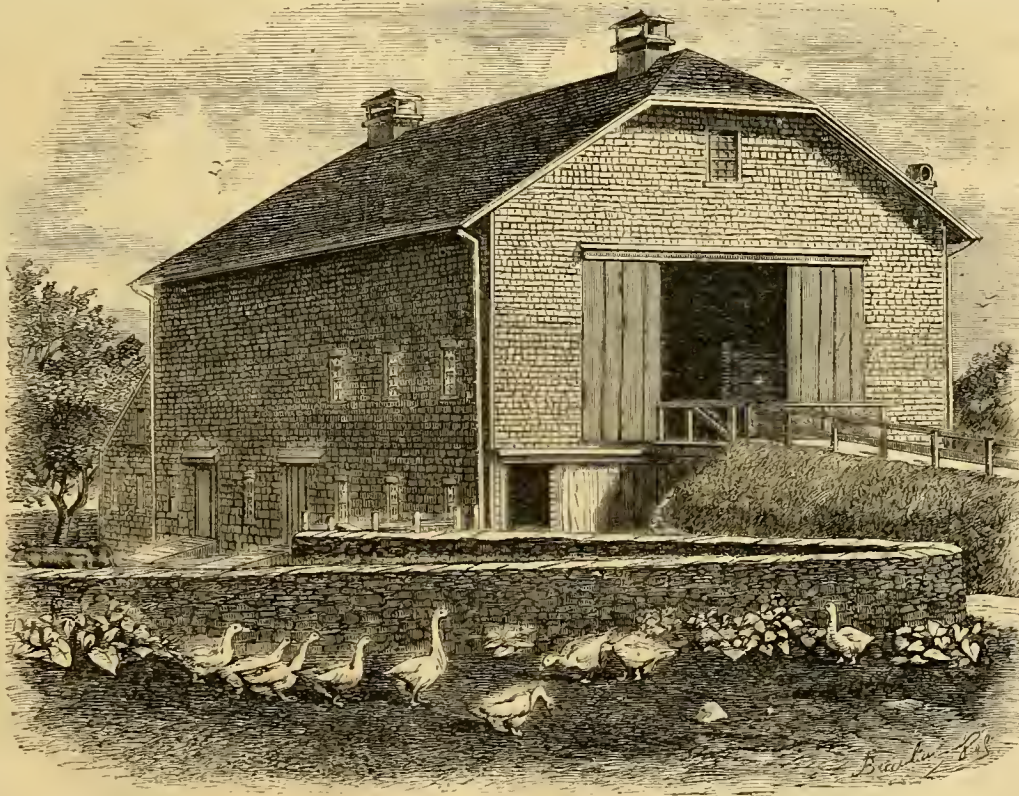
Fig. 2.—THROAT-BAND.

Raking Sea-weed with a Horse-rake.

The old method of gathering sea-weed in piles with a hand-rake and fork is tedious, as every shore farmer knows. By far the larger part of the marine vegetation landed upon the beach is usually lost, through fear of the expense of saving it. On rough shores there is no substitute for the old method. But on the smooth, sandy beaches that line many of our coves and harbors, the sulky horse-rake can be used to great advantage. It does not run quite so readily as upon smooth meadow, but it does its work well, and saves the labor of ten men. It will not only gather the dry weed thrown up by the tides, but the tangled mass that floats in water two or three feet deep. A great deal may be saved in this way that otherwise would not be thrown upon the shore. Another advantage of this mode of gathering is the saving of a multitude of marine animals and small fish, that get entangled in the weeds and do not have time to escape. The horse-rake with its load is a seine to draw them ashore. On some shores this marine animal life is very abundant, and adds much to the value of the sea-wrack. The labor is quite severe upon the horse, and judgment must be used in not loading the rake too heavily. It also tests the strength of the rake, but with good steel teeth, as in the Bay State, there is little danger of breaking.

The Barn at Ogden Farm.

The engraving below shows the elevation of a large barn that has recently been erected at Ogden Farm. Although built on nearly level land, the slope of the surface of the ground being only 2 feet in 100, it is, nevertheless, so arranged that three floors are entered by drive-ways from the ground. The view of the barn is taken from the south-east. The earth excavated in digging the cellars was used in making the elevated drive-way, by which the main floor is reached. At the west end, opposite this drive-way, a slope was dug out to allow manure carts to be driven into the cellar. Under the bridge there is a passageway for carts and animals, and from this a double door opens into the gangway between the stalls. The total length of the barn, on the cattle floor, is 100 feet, and its width 40 feet. The cellar is of corresponding size. The upper or hay floor of the barn is only 80 feet long, and the upper part of the lean-to which covers the extension of the cattle floor is used as a convenient stor-



THE BARN AT OGDEN FARM.

duce a horse in flesh, and probably also interferes with digestion somewhat. When the habit is confirmed, we doubt if it can be cured.

age room for barrels and rubbish generally and also for straw. The barn cellar is 7 feet deep below the sills, and is all in one room, ex-

cept a space 25 feet by 22 feet, in the south-east corner, which is shut off by a cemented stone wall, and is used as a root cellar. The main cellar has a capacity sufficient to store about 100 cords of manure, without obstructing the driveway, which runs between stone piers as far as the wall of the root cellar. The stone foundation wall is carried up on the north side to the height of the ceiling of the cattle floor, as a better protection against cold north winds. The description of the interior, with plans illustrating its arrangement, will be found on p. 367.

Handling a Bull.

A valuable bull is often spoiled, that is, his usefulness is lost, because he cannot be safely handled. Many a bull may be led about like an old cow; some are easily managed with a leading elasp attached to a short staff by a few links of chain. Others, however, require strong apparatus and constant vigilance. In fact, any bull is an unsafe plaything, and should have a ring in his nose before he is twelve months old, and always be handled so that by no sudden freak can he get the advantage of his keeper. Leading staffs which are attached by means of a snap-hook and a few links are not safe in close quarters. The bull may crowd his keeper, who, in order to be safe, braces the staff against the side of the stall or a building. The beast starts back, gets the slack of the chain, then lunges forward, and when the strain comes suddenly, the staff being braced unyieldingly, the ring tears out, and the keeper is then at the mercy of the animal as soon as he finds out that he is free. The best leading staffs that we have seen in use are those which attach directly to the ring. Of such we know of two forms, one of which consists of a strong hook and a screw bolt which is unscrewed when the hook is inserted in the ring and then screwed up. This is awkward, because one must stand close to the hull when the staff is attached, and this is not always safe. The other we figure, giving two sketches from different points of view. It consists of a simple screw hook. The hook is of the best soft iron, half an inch in diameter at the end of the socket, and tapering to quarter of an inch in diameter at the tip. It makes two complete turns at an angle to the shaft, which is of the best and toughest ash, having a perfectly straight grain, and capable of bearing the weight of a heavy man springing upon it with all his might. Such a staff may be inserted in the ring of a loose bull if he can be cornered or driven into a stall, even induced to come up to a cow. When once inserted, so long as it is kept in the hand, the bull is under some control; and the staff will not come out. It would be very difficult for a bull to tear his ring out when held by such a staff, unless it was in the hands of a man, who was not strong enough to prevent the animal from backing him at a run against a wall.



LEADING STAFF.

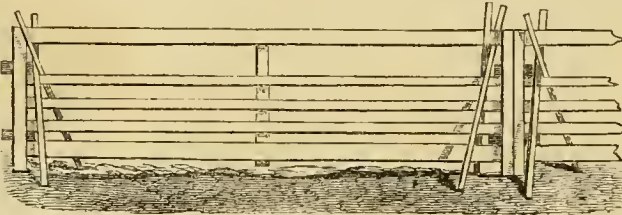
A bull ought not to be tied by his ring. While

in the stall he should be fastened by a rope which he cannot break. Good manilla inch rope is strong enough; and this should be secured to a timber that will not give. If for the sake of extra security one wishes to fasten him by the ring also, a strap with a snap should be used. The strap should always be slacker than the rope. The more a bull is kindly handled, led about, groomed, and petted, the gentler will he be. The rougher he is treated, the more will he show harsh characteristics. Bulls should be early broken to the harness. We have frequently advocated the advantages of making them useful as draft animals upon the farm. Not only are the animals kept in better subjection when worked, but they will be much healthier.

New and Excellent Fence.

BY JOHN W. SOHN, BUTLER CO., OHIO.

Having seen in the July *Agriculturist* the description of a portable fence, I call your attention to one that I invented and have in use, which I think is the cheapest and most durable fence ever made. It may be made in a barn during rainy weather, and it is less liable to decay than any other wooden fence I know. My property has been subject to frequent inunda-



PORTABLE FENCE.

tions, with loss of fences and of other matters. I needed a fence that could be removed on the approaching rise of the river, and replaced when the water subsided, and the one shown in the accompanying sketch is the result of my thoughts. I have had this fence in use for four years, and find it answers for both a stationary and portable fence. It consists of panels made of inch boards, each of which may be used as a gate when desired. I use pine, but any other wood may be used, as the fence is not set on the ground, and hence not liable to rot, but hangs on the stakes, which are easily renewed. The panels may be made of any convenient length or height, according to the lengths of the boards. I have them from 12 feet to 16 feet long, and 4 to 5 feet in height. I will describe a common size, 14 feet long, and 4 feet high. I cut out five battens or strips of board, 4 feet long and 4 inches wide; then I measure off on the floor of a barn a place, 4 feet by 14 feet, and lay down three battens, one at each end, and one in the middle; then I lay down five 14-foot boards on the top of the battens and across the same; the upper and lower boards are 6 inches wide, the other three are 4 inches wide. The lowest board is laid 2 inches from the end of the battens, the next board is laid down leaving a space of 2½ inches, the next leaving 3½ inches, the next 5 inches, and the last even with the top of the battens, leaving 11 inches space. At the ends I lay down two battens directly over the lower battens, and commence nailing down with wrought or clinch nails. At the ends I use 3½-inch nails; at the middle, there being but one batten, 2½-inch nails. In the end battens, through the upper and lower boards, I use ¼-inch bolts, 3¼-inches long, having four bolts to a panel, which makes it very firm. Wooden pins may be used by persons wishing

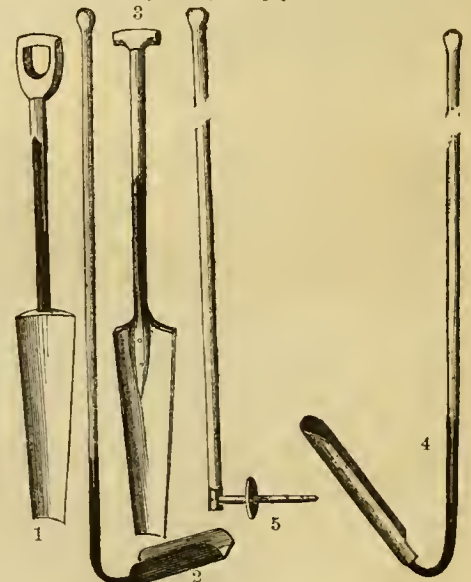
to save the expense of buying nails. When the nails are clinched, the panel is done. In setting up the fence the ends of the panels are put together on a straight line, and an inch board, 8 inches long, is put in the upper space between the battens, and also one in the lower space; this is sufficient to fasten the gates together. Then I take stakes 5½ or 6 feet long, and 1½ or 2 inches square; pin or bolt two stakes together 8 inches from the top, and point the lower ends so that they will go easily into the ground. Then take two pairs of the stakes for each of the panels, and place one inside of the top space between the first two boards at the top, so that the top board rests on the stakes, which incline outward in opposite directions. Raise the stakes so that the gate will be 3 inches above the ground. The stakes will brace the fence in four directions, and no wind can upset it. The fence may be set up in different ways. Four panels will make an enclosure.

Land Drainage—Details of the Work.

BY COL. GEO. E. WARING, JR., OF OGDEN FARM.

It is never pleasant to confess errors; but I am convinced, by what I have recently seen, that in previous writing about drainage, I have been mistaken on one point. That is, in insisting, as a universal rule, that the whole line should be opened from the upper end of the lateral to the lower end of the main, and that the main should be kept open until the tile-laying and covering should be finished in all its laterals. This is frequently, but not always, true,—perhaps it is not even generally so.

I have probably directed the laying of over a hundred miles of tile drains, and I have always tried to approach as nearly as possible to the English practice, as I had seen it described. I have bought sets of English draining tools, and have read in English agricultural books and papers about the way in which the work is done. I have seen pictures and diagrams showing every step of the operation, and have had letters from England (in reply to my questions)



TILE-DRAINING IMPLEMENTS.

telling me precisely what they do there. I have tried for fifteen years—with scores of Irish ditchers—to imitate them, and have finally concluded that the statements made were not true, and that the pictures drawn were drawn from the imagination. I could in no way get my ditchers dug without having the men tramping on the bottom, and making more or less mud accord-

ing to the amount of water,—and this mud, running toward the main, carried a sure source of obstruction with it. Hence, I have always recommended that the whole line be opened from one end to the other, before a tile is laid, and that the tile-laying be commenced at the upper ends of the laterals and continued *down stream*, so that no muddy water would run into them, as would be the case if the tiles were laid from the lower end upward.

I am still convinced that in very wet, soft land, or where the grade is so slight that great care is necessary to preserve the uniformity of the fall, this precaution is necessary. But wherever there is a fall of as much as one foot in a hundred feet, if the bottom is ordinarily firm, *the best plan will be to reverse the direction*, and to commence laying at the *lower* end of the drain—putting in the tile and covering it up, as fast as the digging progresses.

I am led to this change of opinion by seeing the thing done by drainers of English education. What I could not understand from description, nor attain by experiment, is made clear by observation. *In the digging of ordinary drains the foot of the workman never reaches to within less than a foot of the bottom of the ditch; consequently, there is no trampling of the floor of the drain, and no formation of mud. What water may ooze out from the land (and, as but little of the ditch is open at once, the amount is very small) has no silt in it, and cannot obstruct the tile through which it runs.*

I will try to describe the process so that all may understand it. We will suppose the main drain to be laid and filled in, junction pieces being placed where the laterals are to come in, and that we are about to dig and lay a lateral emptying into it.

1. A line is stretched to mark one side of the ditch, and the sod is removed to a spade's depth (15 inches wide) for a length of about two rods, and a ditch is dug about 18 inches deep, with a narrow bottom. 2. A ditching spade (fig. 1) 20 inches long in the blade, 6 inches wide at the top, and 4 inches wide at the point,—made of steel and kept sharp—is forced in to its whole



Fig. 6.—OPENING THE DITCH AND LAYING THE TILES.

length, and the earth thrown out. Of course it will be necessary in very hard ground to do some picking, but it is surprising to see with what ease a man with an iron shank screwed to the sole of his boot will work the sharp point of this spade into an obdurate hard-pan. The loose earth that escaped the spade is removed by a scoop (fig. 2), 4 inches wide, which the workman, walking backward, draws toward him until it is full, swinging it out to dump its load on the bank. In this way he gets down 3 feet, and leaves a smooth floor on which he stands. 3. Commencing again at the end next to the main, with a narrower, stronger, and even sharper spade, of the same length or a little less (fig. 3), 4½ inches wide at the top and 3 inches at the point, he digs out as neatly as he can, another foot of earth,—he facing the main and working back, so that he stands always on the smooth

bottom, 3 feet below the surface. When he has dug for a length of 2 or 3 feet, he takes a snipe-bill scoop (fig. 4), only 3 inches wide, and, using it as he did the broader scoop, removes the loose earth. The round back of this scoop, which is always working a foot below the level on which the operator stands and which performs the offices of a *shovel*, smooths and forms the bottom of the trench, making a much better bed for the tiles than it is possible to get if it has to be walked on, and regulates the grade most perfectly.

4. When the short length of ditch has been nearly all dug out and graded, the branch on the junction piece of the tile is uncovered, and the tile is laid by the use of a "tile-layer" (fig. 5), operated by a man standing astride the ditch on the banks. The collar is placed on the end of the branch on the upper end of the tile. The implement lowers the tile (with its collar in place) and the other end is carefully inserted in the collar on the branch. Then the end of the second tile is inserted into the second collar, and so on until nearly all of the graded ditch is laid.

5. The most clayey part of the subsoil is thrown carefully down on the tile and tramped into its place,—all but the collar end of the last tile being covered,—and the ditch filled at least half-full and pounded.

6. Another rod or two of the ditch is opened, dug out, laid, and filled in as above described,—the amount opened at any one time not being enough to allow the accumulation of a dangerous quantity of water. If there is any considerable amount of water in the land, or if it is feared that it may rain during the night, the tile is left with a plug of grass or straw, which will prevent the entrance of dirt.

Fig. 6 gives a section of a ditch with the work in its different stages. The tile is shown in section.

And now for the result:—

Last year, after the draining of Ogden Farm was completed, I undertook the drainage of a neighbor's land, employing the same gang of experienced Irish ditchers. The best bargain I could make was for *one dollar per rod* for digging and back-filling (tile laying not included).

The *best* men earned \$3.50 per day,—the average not more than \$2.25. Owing to the lateness of the season, the work was suspended until this year's harvest should be completed.

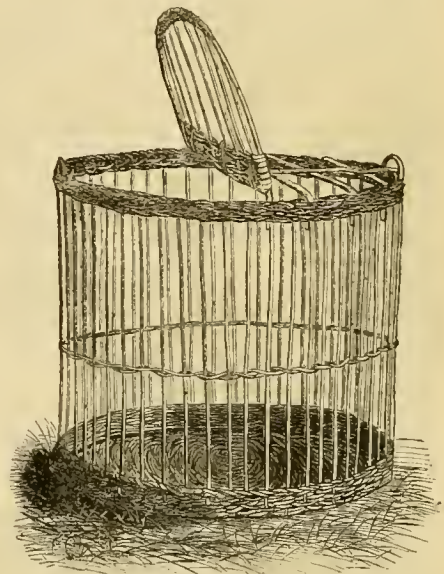
This year I hired a gang of tile drainers from Canada, who had English experience. They work precisely as above described. The price paid is 75 cents per rod for digging, back-filling, and tile-laying (for the whole work complete, although, owing to the *hard-pan*, much picking is required). The best man among them completes seven rods per day (\$5.25), and the average is fully five rods (\$3.75). The amount of earth handled (owing to the narrowness of the ditches) is less than one-half of what it was last year, and the work is done with a neatness and completeness that I have never seen equaled.

What these men are doing others can do as well, and I am satisfied that in simple, heavy

clays the whole work of digging and tile laying can be done for less than 50 cents per rod.

Hamper for Poultry.

Fowls and other poultry at our exhibitions often have their good looks greatly damaged by being sent to the shows in unsuitable boxes. The best way of sending fowls we know of is to cage them in those open-work wicker baskets, called Fowl Hampers. We give an engraving of one, and from it any basket maker

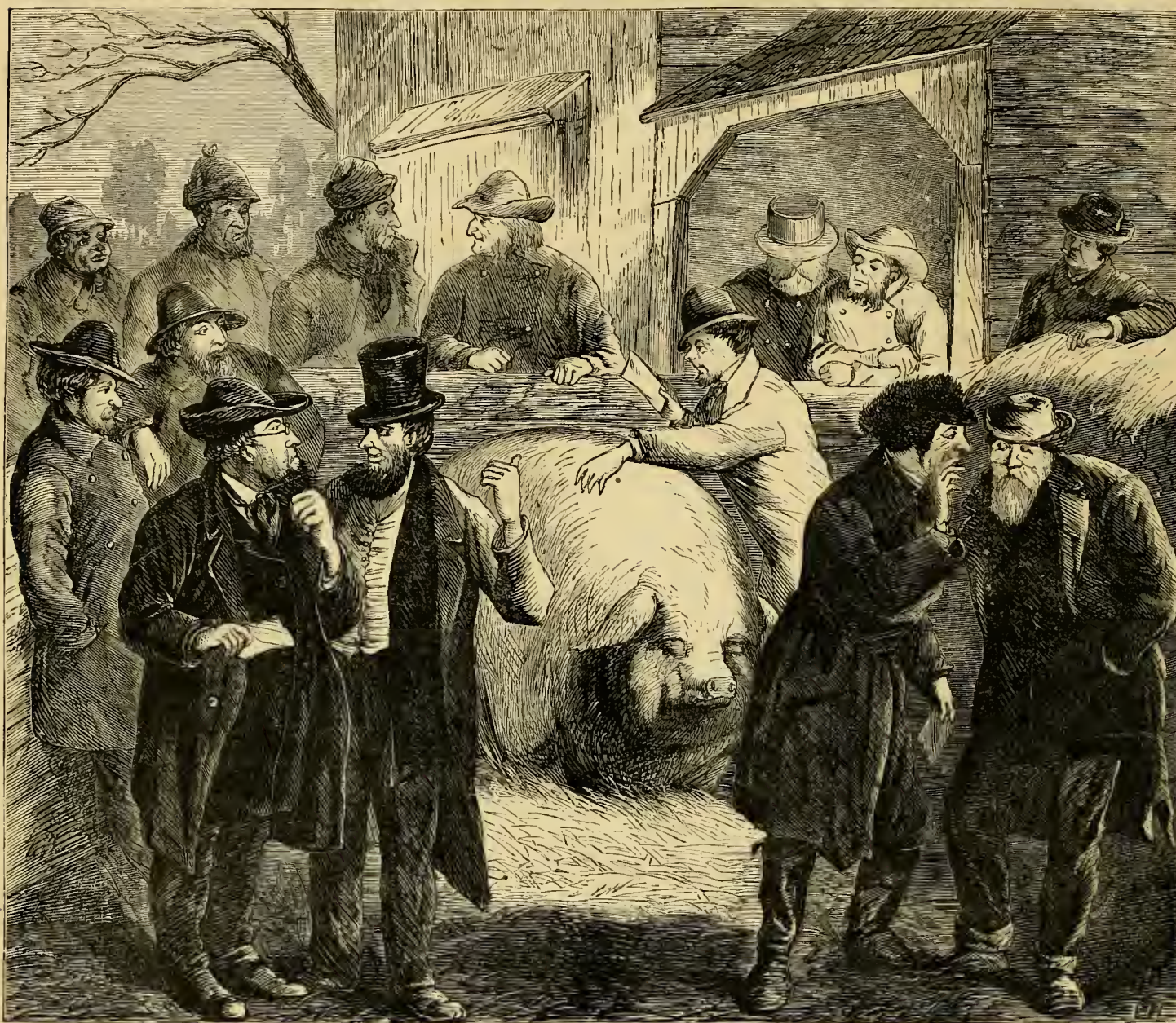


POULTRY HAMPER.

may easily construct others. The one we copied was made of peeled willow; that with the bark on would be equally good. There is a close bottom, and a close band, three inches high, at the base, another similar band at the top, and a narrow one of only two or three strands around near the middle, to stiffen the upright rods, and hold them in place. The top is hinged in the middle, one part forming a lid, the other being permanent. Handles are also provided and placed in the top. When used for fowls, these hampers are lined with any cheap goods, sacking or calico, the lining extending around the sides and top so that the feathers cannot be injured, and to prevent harm coming to the fowls from draughts, to which they are very sensitive. Ducks and geese may be shipped in unlined hampers. The food and water is placed in cups fastened to the sides. The bottom should be covered thick with straw, and it is often desirable to raise the height of the close band around the base by stitching in handfuls of pulled straw to a height of several inches. These hampers may be washed in disinfecting soap and water, and are more easily kept clean and free from vermin than box cages. As soon as out of use, they should be thoroughly cleansed, sunned, and put away—not used for coops, hospital wards, and all sorts of purposes. See articles on basket making in the *Am. Agriculturist* for April and June, 1867.

Digging Potatoes.

Potatoes are bringing such poor prices this year that unless we exercise great economy in digging we shall profit little by the crop. This year will show also the great advantage that potatoes which grow close have over those which are scattered all through the ground. We are getting to be critical about the various qualities of our crops, and this is one which,



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GUESSING AT THE WEIGHT.—FROM A SKETCH BY THOMAS WORTH.—Drawn and Engraved for the American Agriculturist.

when the crop is harvested, makes many a dollar's difference in the labor of digging, and in the number of potatoes left in the ground. We have made some careful experiments upon several varieties, with a view to ascertaining how much scattered the tubers lie, and would be glad to hear from any who will make similar ones. The questions to be answered are:—How far, on an average, from the center of the hill do the great majority, say five-sixths, of all the potatoes lie? and, How far is it, on an average, from the center of the hill, or the main stalk, to the outside of the outmost tuber? At least ten hills should be dug to get an average.

When potatoes are plowed out there should be plenty of hands, and each one should have just so much space assigned him as he can clear up between the times the plow passes. A large, double-mould-board plow, drawn by two horses and run deep, does good work, and the various potato diggers which are on the principle of double-mould-board plows with the mould-board slit so as to form fingers, are not very great improvements upon it. However, when one has many potatoes to dig or much ground to go over, they will pay. We don't believe it will pay to get any other kind. Cer-

tainly we have never seen one work which we regarded as a success. If land is in a condition for winter grain (rye), and a sufficient force of diggers can be secured, the potatoes may be taken out and the land left thoroughly plowed at one operation. In this case we would take a 10-inch or 12-inch furrow, eight inches deep through the rows, and plow, following the rows to the end, and carrying the plow across the ends of the lands. If there are many weeds or much haulm upon the field, it should be mowed over, and the rubbish raked up and carted off before the digging commences. And in whatever way the potatoes are dug, the field should be thoroughly harrowed afterwards. It will usually pay to cross-plow and harrow a second time, especially if winter grain is to follow.

Should the tubers be found more or less decayed, they should be put upon a barn floor or spread out somewhere under cover, and carefully sorted. The partially decayed ones, if the worst spots of rot be pushed out with the thumb, may be boiled for the hogs. Potatoes will heat if placed in large piles, before they have thoroughly dried and lost some moisture. They may be put not more than two feet deep in bins or in pits as soon as dug, if the weather be dry.

Guessing at the Weight.

It takes but little to make an excitement in some obscure country towns, where the old style of spending more time at the tavern and grocery than on the farm is not yet done away with. The artist, Mr. Worth, has sketched a scene that he has frequently witnessed in — well, we will not say where, but it could only occur in places where the mail takes few or no agricultural papers. The Squire has fattened a pig, which he intends to take to the county fair the next day, and all the wise men of the neighborhood have come down to inspect the animal and guess upon its weight. There are some people who seem to have very little talent at anything else, who are very acute at guessing at the weight of a pig. In some parts of the country guessing at the weight of pigs even takes the form of gambling, and bets are made upon the result. The sharp ones contrive, in some way, to get at the weight beforehand, and their guesses are often to the discomfiture of the others. It is a harmless amusement to guess at the weight of a pig; but we heartily despise "pig-guessing," as it is carried on in some localities—when betting is involved.



Fig. 1.—SPIKED BLAZING STAR.

The Blazing Star.—*Liatris*.

Nothing gives us more pleasure than to see our native plants brought into cultivation. There was an unusual number of these in the grounds formerly owned by Charles Downing, and in visiting this choice collection of plants, we think we gave more attention to the cultivated natives than to the choicest exotics. Several species of Blazing Star (*Liatris*) made such a show, that we were very glad that Mr. D., before he left his place, sent us bits of them. We have some ten species growing in the Northern States, but they are more abundant South and West than at the North. They are doubtless found growing wild with many of our readers, but they can have no idea how much finer the plants are when they are given good garden soil, and relieved from the necessity of struggling with other plants. Engravings of three of those we have cultivated are here given. It will be seen that they differ very much in habit, but they have all the same general structure, and a great similarity in the color of the flowers, which is a pale purple. The Spiked Blazing Star (*Liatris spicata*), fig. 1, is the earliest



Fig. 2.—SCALY BLAZING STAR.

of the three. It commences to bloom early in July, and is showy for about a month. The Scaly Blazing Star (*L. squarrosa*), fig. 2, is so called from the scales or involucre surrounding each head of flowers. The most striking of all is the Dense-spiked Blazing Star (*L. psychnostachya*), in which the heads of flowers are crowded together as closely as they can be upon the stem, and form a most striking flower cluster, about two feet in length. The plant stands five feet or more high, and its great mass of flowers makes it a most noticeable object. The species we have illustrated, as well as several others, are found from New England west and south, and the roots of them may be readily transferred to gardens, or the seeds may be collected when ripe this autumn and sown at once.

Planting Bulbs.

Bulb fanciers are one thing, the general public another. The first-named need no directions about selecting the choice varieties, or concerning the composts in which to plant them. One who has had no experience in bulb matters will, if he reads most of the florists'



Fig. 3.—DENSE-SPIKED BLAZING STAR.

directions, think it is of no use for him to undertake to grow Hyacinths, Tulips, and the like, as the directions for planting them are so elaborate, and when he takes up a dealer's catalogue, he finds the prices of the most select altogether beyond his means. The best way for a lover of flowers to do is to buy unnamed sorts, and leave the cultivation of the fancy varieties to those who have more experience in the matter. Good, unnamed Hyacinths can be had for about \$2 per dozen; Tulips, for 75 cts; Crocuses, for 40 cts.—the prices varying slightly with the different dealers. Any good garden soil will answer. If heavy, add sand or sandy loam, and if poor, spade in some manure—cow manure being the best. Plant Hyacinths 6 or 8 inches apart and 4 inches deep, Tulips an inch shallower and nearer; Crocuses may be as near as 3 inches, and need not be covered with over 2 inches of earth. The flowers make the best appearance if the bulbs are planted in masses or clumps. In preparing the soil, the bed will be raised a few inches above the general surface—which will be all the better, as water will not stand upon the bulbs. It is better to place a covering of coarse manure or litter over the

beds, as this will prevent severe freezing, and also premature starting in spring. Besides the bulbs we have mentioned, the Bulbocodium, Crown Imperial, Jonquil, Snow-drop, Snow-flake, and others, are to be commended.

Packing and Preserving Grapes.

Some time ago we received from a Southern correspondent a package of grapes, asking us what they would bring in the N. Y. market. The grapes were put in a slatted crate, and when they reached us the package was about two-thirds full of bruised and mangled fruit, which was worth absolutely nothing. Because tomatoes and cucumbers must be put in open crates, it does not follow that grapes should be. No worse way could be contrived for sending this fruit than in a crate with slats. Grapes come best in tight boxes. They should be picked and allowed to "cure" for a week or more in order to toughen their skins before they are packed. Whatever box is chosen should be opened at the bottom, and good bunches laid in regularly; then the box is to be filled up with good bunches so full that it will require a slight pressure to bring it down to its place. The bottom is then to be tacked on and the label put upon the opposite side, which will be the top. This plan works admirably for Northern grapes; how it will answer for those raised at the South remains to be seen. At all events they must in some way be packed in some manner that will not allow them to shake. Another thing. No inferior fruit will sell in the N. Y. market. A single green berry will spoil a box. Have the bunches carefully looked over, and if there are any unripe berries, remove them. Some of our largest growers use boxes holding five pounds. There are plain boxes with ends of $\frac{1}{4}$ -inch stuff, and sides, top, and bottom of thinner material. There is a veneer box made which has many claims to favor as it can be packed in such small compass for shipping. Grapes for keeping for winter should be left on the vines as late as is safe and then kept at a slow and as uniform a temperature as possible. Our dealers have them in excellent condition long after New Years, and we have known them, by observing these conditions, to keep until April.

Raising Potatoes from the Seed.

Seed potatoes and potato seed are two very different things. By seed potatoes is meant the tubers or potatoes reserved for propagation. These, when planted, almost invariably reproduce their kind. We say "almost," as they, like other plants, will sometimes sport. Potato seed is that which is produced in the balls which are found upon the vines. From the seeds contained in these there is no probability of getting potatoes like the parent tuber, and each of the many seeds a ball contains may produce a widely differing one from that yielded by any other seed from the same ball, and in this manner new varieties are produced. The interest at present felt in potato culture has induced some to ask about raising potatoes from seed. It is an interesting but a not very encouraging field for experiment. Mr. Goodrich spent a lifetime at it, and produced, out of many thousands, but few that will have any permanent value. Still he did a good work; he produced some varieties which were hardy when there was a general failure, and he opened the way for others to improve upon his labors. We have now many fine potatoes, and one who

raises from the seed must produce something better than any we now have to make his labor remunerative. Still, we would not discourage experiments. We do not think that the quality of several of our potatoes can be excelled. We must now look in the direction of earliness and productiveness. The ball of the potato selected for seed should be from the earliest set upon the vines; this, when ripened as much as can be upon the stem, should be cut with a good portion of the vine, and placed in the sun to mature. Some direct, when the ball is shrivelled, to soak it in water and wash out the seeds, but we believe that they will keep better within the ball. In spring the seeds are to be sown and the plants treated precisely like tomato plants. Sow in a hot-bed, or in a box in the house, and, when large enough, transplant to other boxes, and, when the weather will allow, plant in good soil out of doors. The English authorities say that small tubers will be produced the first year, which are to be saved and planted the next year. This may be the case in the climate of England, but Mr. Bresee, who has had such remarkable success in producing new varieties, and to whom we are indebted for the Early Rose, Bresee's Prolific, and King of the Earlies, informs us that he gets tubers the first season of sufficient size to enable him to judge of their quality. The potatoes which we have mentioned were started in a box in the house, planted out at the proper time, and selected the first season from a large number which were rejected.

Notes from "The Pines."—No. 5.

My text is, "How Not to Do It," but I shall let Friend Harris preach the sermon. The following was sent as a part of "Walks and Talks," but as it was crowded out of that part of the paper, I cannot do better than to introduce it here, as it gives a better lesson than anything I could write. Our old professor of chemistry used to say that an experiment which did not succeed was quite as instructive as one which did. There is one thing I like about "W. and T.;" he has no hesitation in telling his failures, and I think he takes a little more pleasure in recording a bad crop than a good one. He says:

I am glad Brother Thurber of the "Pines" is telling his experience. I do not think it will be at all necessary for him to tell his men to sit under the shed while he is absent at the city. They will do that without his telling them. I am glad he has got such a large garden, because nothing is so good for the exercise of that rarest of all graces, Patience. If he will only lay it out as I did mine, I will guarantee that he will be able to tell us what varieties of fruits are the most popular for ordinary tastes. He will also be able to tell us which of the many patented whiffletrees is best to plow with among trees. I hope, too, his garden has been neglected as much as mine was, for he will then have a fine opportunity to bring out an enlarged edition of his valuable work on "Weeds and Useful Plants."

I laid out my garden with a walk running through the center, and also walks across the garden, thus cutting up the land into nice squares. And along the walks four or five feet from the edge, set out some forty or fifty varieties of dwarf apple and pear trees, and two feet nearer the walks, between each tree, I planted a currant and gooseberry bush, and then along the edge of the walk I have a row of strawber-

ries. Is not that a nice arrangement? The trees are now six or eight feet high, and many of them bear half a bushel or so of apples. They are the healthiest and pleasantest things in the garden. And I would not ask for finer gooseberries and currants, or better strawberries. This is one of the features that I want Thurber to imitate. One of his objects in having such a large garden is to test varieties. And if the boys in Bergen County, N. J., are as good judges of fruit as they are here, he will be able to tell us not what he thinks of the varieties, but what the boys think of them. When the trees grow up, you cannot see into the squares where the boys are hoeing, but in some way or other they always manage to see you. I will say this much for the boys I have to hoe onions, parsnips, carrots, etc., in the garden, that I never yet saw one of them touch an apple or a gooseberry. And it is equally true that few people have ever seen me pick a ripe one—for the simple reason that there are few left to pick. But this is no objection to the arrangement, for by walking through the garden you can tell at a glance which are the earliest and best varieties. The stripped trees of Early Joe, Early Harvest, and Primate, afford pleasing confirmation of the good opinion which you have always entertained in regard to their excellent qualities, and you will be happy to perceive that the taste for fine fruits is becoming general.

But for my part I am getting a little tired of this arrangement, and am about to remove all the trees along the cross-walks and have no walks except those running lengthwise of the garden. We shall then be able to plow and cultivate straight through. The truth is, a big garden on a farm laid out as mine is, is a great nuisance. I have been in the habit of raising a good many parsnips, carrots, and other roots, in the garden, for stock, but they cost three times as much as they would if raised in a field in rows wide enough to admit the use of the horse-hoe. And so with potatoes and cabbage. It is a waste of time to raise anything more in the garden than what you want for daily use in summer. The garden proper should be no larger than you can afford to spade and hoe. I would never have a plow or a cultivator in it. Then let all the main crops of fruit and vegetables be raised on a plot of land devoted exclusively to them, and planted in long rows, where a horse can be used to advantage. Farmers will never have good gardens until they adopt some such plan. In my garden the currant bushes were set out along the fences, where I must either allow them to be choked out with weeds and grass, or fork over the land every spring by hand, and afterwards hoe it several times. Why not have them in straight rows where the land could be kept clean with a cultivator? Then again I had a piece of land, well suited to the use of the cultivator, but I was foolish enough to set out at one end of it an asparagus bed, as a headland for the horse to turn upon. It never occurred to me that the bed could have been set out lengthwise of the garden just as easily as at the bottom of it.

"I always thought you would get tired of having such a big garden," remarks one of my neighbors. But in truth, I am not at all tired of it. It pays me better in pleasure, health, and profit, than any other piece of land on the farm. All I regret is, that I did not know enough to lay it out in such a way that I could cultivate it to better advantage. I do not see how I could get along without having a plot of land near the house devoted to root crops, where I can set the men and boys to work at odd times—for

instance, after a shower, in haying and harvest, or in the morning, before the dew is off the hay. With a big garden or plot of land of this kind near the house, a farmer need never be at a loss to know what to set his men to do. No matter what the weather is, there is always something that can be done in the garden.

To most of which "The Pines" assents. You think you have made a discovery, but had you read the *Agriculturist* properly you would have seen that we have constantly advocated the separation of the Fruit Garden and the Kitchen Garden. You have followed the old English way of doing things, and a "plentiful lack" of fruit is the result. Have your fruit garden by itself, and when it is worked, be there to see, and you may chance to taste a Pimate, the best of all early apples.

Now about working the farm garden entirely by the spade and hoe, I cannot agree with you. Small stuff is best cultivated in this way, but if the cabbages, beets, carrots, and the like, are so far apart that, at odd times, the cultivator can go through them, the garden will be in better order than if hand labor is relied upon.

Our market-gardeners know a thing or two, and you would be surprised to see the work they do with a small "cabbage plow." They seem to prefer this to any other implement. It runs shallow; first the soil goes one way and then the other, and is kept constantly stirring. Now it is just as easy to have the garden stuff in rows 200 feet long as it is to have it in eight rows 25 feet long. But, of course, the manner of working will depend upon the size of the garden. If simply a small family garden, where none of the products are sold, and nothing is to be preserved for winter, then the hoe and rake, or some of the excellent hand-cultivators, will answer, and the crops may be put nearer together than where the cultivator is used.

The Trumpet Creeper (*Tecoma radicans*) is a most showy climber. It has pleasing foliage, and its great orange colored flowers are splendid when seen from a distance. But then, on the other side, it suckers almost as badly as a New Rochelle Blackberry, and by coming up through the grass at ten and twenty feet away from the main plant makes itself a nuisance.

It is not surprising that there is a popular belief that certain trees poison the ground. When we see the number of roots that a vigorous tree throws out, and the great expanse of foliage which is making a constant demand upon the roots, we only wonder that anything grows near a large tree. We do not believe that a tree "pizens the ground," as is the common expression. The trouble is that it appropriates all the nutriment and also casts a broad shade. We have a good illustration of this in a large black-walnut tree that stands just on the line between us and our neighbor. The former occupant of this place dug down and cut off all the roots from his side of the tree, while those upon the other side were allowed to remain. Things upon our side grow moderately well near the tree, while the exhausting influence of the roots is plainly to be seen upon our neighbor's land.

AUTUMN SOWN ANNUALS.—There are a number of annuals which when they come up in the flower garden from self-sown seeds bloom much better than those sown in spring. The

cultivator should take a hint from this and sow seeds of such plants in the fall. One plant which we now seldom see in cultivation, the Rocket Larkspur, is especially benefited by this treatment. A bed of larkspurs sown in autumn will come out in spring as showy, if not as fragrant, as one of hyacinths. Most of the California annuals do much better if fall sown—*Nemophilas*, *Whitlavis*, *Gilias*, etc., as do *Pansies*, *Mignonette*, and many others. It is well to give the soil a covering of litter, to prevent frequent freezing and thawing in early spring.

Horticultural Skirmishing.

Just now the small-fruit growers and amateurs are having a lively time, and as the agricultural and horticultural papers do not seem to afford room for the combatants, their articles overflow into the daily papers. The vexed questions seem to be three: 1st, Is there a distinct Raspberry called the Naomi, or is it the *Francia*?—2d, Is the "Mexican Everbearing" Strawberry distinct from the old Monthly Alpine?—3d, Is the Black-cap Raspberry called Mammoth Cluster, the Miami or the Mc'Cormick?—All these points are important ones to fruit growers and one would think that it would not be difficult to settle them. The matter seems to have got outside the bounds of discussion into a skirmish of words and a squabble of personalities. One would think from reading the articles written upon both sides of these questions that the main point was not to establish the truth but to charge the other side with ignorance, interested motives, or something worse. Many of the fruit men seem to be remarkably sensitive, and if one differs with them in an estimate of quality or on a question of identity he is immediately accused of being prejudiced, or in the interest of some rival variety. If the controverted points above referred to are ever settled we shall gladly record the verdict. Meantime the varieties in dispute are getting a splendid advertising through the agricultural and other papers at the East and West.

A New Insecticide.

M. Cloëz, who is engaged at the garden of the Paris Museum—the world-renowned *Jardin des Plantes*—has invented what he considers a complete annihilator for plant lice and other small insects. This discovery is given in the *Revue Horticole*, with the endorsement of its distinguished editor, E. A. Carriere. To reduce M. Cloëz's preparation to our measures, it will be sufficiently accurate to say, take 3½ ounces of quassia chips, and 5 drachms *Stavesacre* seeds, powdered. These are to be put in 7 pints of water and boiled until reduced to 5 pints. When the liquid is cooled, strain it, and use with a watering-pot or syringe, as may be most convenient. We are assured that this preparation has been most efficacious in France, and it will be worth while for our gardeners to experiment with it. *Quassia* has long been used as an insect destroyer. The *Stavesacre* seeds are the seeds of a species of Larkspur, or *Delphinium*, and used to be kept in the old drug stores. Years ago they were much used for an insect that found its home in the human head, but as that has fortunately gone out of fashion, it may be that the seeds are less obtainable than formerly. The *Stavesacre* seeds contain *Delphine*, which is one of the most active poisons known, and we have no doubt that a very small share of it would prove fatal to insects.

Taking up Plants for Winter.

Many of the half-hardy plants which have bloomed in the borders, such as *Fuchsias*, *Carnations*, *Roses*, *Geraniums*, etc., should now be prepared for their winter quarters and potted at once. These may be kept in a cold frame or pit or in a dry cellar. The succulent shoots should be cut away at the time of potting, and be exposed to the air, but shaded until they become established. The longer they can be kept out without injury from frost, the better will they endure their winter confinement. *Chrysanthemums* for blooming in-doors should now be potted. They will wilt somewhat at first, but will soon recover, and give a satisfactory bloom. After the flowering is over, cut back the stems and place the pots in the cellar. Some of the *Geraniums* will bloom during the winter in the house if taken up early and well cut back at the time. Ivy for house growth will bear almost any treatment, but it is best to take it up at once and allow it to be well rooted in the pots before removing it in-doors, and then take it to a cold room.

Getting Wild Flowering Shrubs.

Those who wish to transfer any of the many beautiful wild shrubs from their native localities to their gardens and grounds should mark them before the leaves have fallen. Unless one has examined the wood and habit of growth more closely than most persons are in the habit of doing, he will find it difficult to distinguish one naked shrub from another. It is much better to remove those shrubs which grow in low and wet places in autumn than to wait until spring, as then such localities are usually so wet as to be inaccessible. Besides this, there is more time in the fall for such work. If the shrubs cannot be set out at this season, heel them in carefully, and they will be all ready for spring planting. It is a well-known fact that plants which grow naturally in wet places will flourish all the better if transferred to a drier soil, while those which naturally prefer a dry situation will not endure a change to a low and moist one. In the removal of native shrubs these points should be borne in mind.

Corn Salad.

One of the earliest green things which appears in our city markets is Corn Salad—small tufts of green leaves, which look fresh and spring-like, and are prized by the French and Germans, but we doubt if it is much consumed by Americans. It is sown in autumn—perhaps it is too late now in Northern localities—and when the plants are up they are covered, on the approach of cold weather, with straw or hay. In March the covering is removed, and the first warm days start it into growth and give a cutting. It does not seem to have any positive qualities in itself, but, being tender, it makes an acceptable salad, with whatever dressing may be fancied.

Keeping Winter Pears.

No fruit is worse treated than the late autumn and winter pears. They are generally gathered before their time, and then kept in a dry atmosphere. What wonder is it that a fruit which should be melting and delicious, turns out to be a shrivelled, tough, and tasteless thing! Most

of the late varieties hang on well, should be allowed to remain until there is danger of hard frosts; they are to be carefully picked when dry, placed in boxes or barrels, and kept as cool

mon. The Poet's Narcissus (*N. poeticus*) has also one-flowered stalks. The petals are pure white, the cups yellowish, with a reddish or purple border. Primrose Peerless, or Two-

which shall be large enough not to be easily lost, and not so large as to be unsightly, he will confer a great benefit upon those who have much to do with labeling plants in a garden.



SINGLE JONQUIL.

as possible. It is not a good plan to take them to the cellar until the weather becomes so cold as to endanger their freezing. When in the cellar the temperature must be kept as low as possible, without danger of frost. Do not mix varieties in the same package. The different sorts have each their own time for maturing. A frequent examination will show how the process of ripening is going on, and the slower this progresses, the finer the fruit is likely to be. When the proper changes have taken place within the fruit, it is indicated by a change in the color of the skin. When this commences, the fruit may be taken in small quantities at a time to a warm room, to "finish off." We have seen even the despised and much abused Vicar of Winkfield, when treated in this manner, prove itself a most acceptable table pear.

The Narcissuses.

The various species of Narcissus are not so frequently seen in our gardens as they formerly were. The Jonquils, Daffodils, and Primrose Peerless, are old-fashioned flowers, but they are not the less beautiful for all that. They are so bright and generally so fragrant that they seem to properly belong to the spring. These are all species of Narcissus, and are all hardy. The Jonquil is *Narcissus Jonquilla*; the flowers have light yellow petals and a cup of a darker color. The Daffodil (*N. Pseudo-Narcissus*) has but a single flower on a stalk, is yellow, with a large cup in the centre, which has a crumpled appearance. A double variety is quite com-

flowered Narcissus (*N. biflorus*), bears two flowers on the stem, white or cream-colored, with a yellow cup in the centre. Almost all of these are readily obtainable; they should be planted this month, and they need not be removed for several years. The finest of all, the Polyanthus Narcissus, is not to be relied upon to endure our winters, though if not planted until late, and then set several inches deep and covered with leaves or litter, it will usually succeed.

THE LEMON VERBENA.—This plant, so much prized for its fragrant leaves, is not a Verbena proper, but *Lippia* (or *Aloysia citriodora*). It is a low greenhouse shrub which is frequently planted out in the borders, though by careful training it may be carried to a height



AFRICAN MARIGOLD.

The Marigolds.

The spring flowers are pure and tender in color. Those of midsummer and autumn are rich in color, and velvety in texture. In no annual has there been a greater improvement than in the Marigold. The old Pot Marigold, *Calendula officinalis*, which used to be so common in old gardens, belongs to a different genus from those now most prized as ornamental plants. Our varieties are known as African and French Marigolds, and belong to the genus *Tagetes*. The plants all have a strong and what is generally considered a disagreeable odor, but the flowers of the French Marigold (*T. patula*) present a great richness of color. If one fancies rich shades of dark maroons or splendid browns, we do not know of any annual that will give him these in greater perfection. There is a velvety texture about the petals, and a full richness about the coloring that is, in these late summer days, very pleasing. In the engraving we give, as well as black and white can represent it, a plant of what is called the French Marigold. Could we show the rich, glossy brown tints, the picture would be perfect. Another species has been introduced of late years, the *Tagetes signata*, a free flowering dwarf, and one of the most desirable for garden culture. Plants of such easy culture are always desirable in gardens, and we hope to see more attention given to the cultivation and improvement of the different species of the Marigold. If a hybrid of the two species we have mentioned could be obtained, it would be fine.

of several feet. Many who have enjoyed the odor of the leaves during summer desire to keep the plant during winter, but all attempts at potting it with a view to grow it in-doors are sure to fail. It is a deciduous plant and must have a season of rest. Take up the plants before frost injures them, and pot them and place them under the stage of a greenhouse, or, in absence of such a structure, in a dry cellar where they will not freeze. In February or March they may be brought into the greenhouse or a warm room and they will soon start into growth.

Marks and Numbers.

In the vegetable garden we have no difficulty with labels, as we use good-sized stakes for varieties where it is not safe to trust to memory. In the flower garden it is difficult. If a small label be used, the men are sure to displace it in weeding, and if those large enough to avoid this risk be employed, they are unpleasantly conspicuous. Where there is a collection of herbaceous perennials, it is very desirable to have a durable stake,—one that will not only remain legible but that will not decay. We had no difficulty as regards legibility last year, as we used the Horticultural Indelible Pencil, but we were much troubled by the decay of the stakes at the lower end. We know of no better way than to use ordinary pine stakes and dip their lower ends in gas tar. This is a bother, but it will do for rainy-day work. If some one will suggest a neat, durable, easily prepared stake or label,

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Feather Fashions.

What fashion is, or who decides what the fashions shall be, we do not pretend to discuss. A thing is "the fashion," and that is the end of it. The matter is alluded to now to show one particular phase of the prevailing taste. Stuffed birds, and wings and breasts with feathers on them, have long been used for decorating the things ladies call hats. This



Fig. 1.—ORNAMENT OF CEDAR-BIRD, ETC.

season the style has broken out in a new quarter, and the most curious combinations are seen. Some college boys, wishing to play a trick on the professor of Natural History, took the body of a beetle, fastened some grasshoppers' legs and butterflies' wings to it, and placed it on his desk. When the professor came in, he gravely took it up and said: "Gentlemen, I have here a remarkable speci-

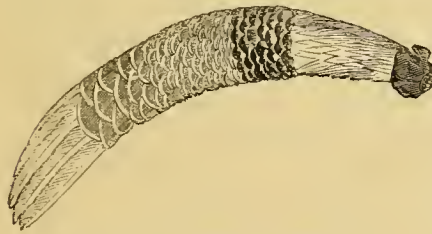


Fig. 2.—FEATHER ORNAMENT.

men of a humbug." The ornaments to which we refer as being at present popular are of some such construction as this "humbug." The head of one bird, the wings of another, and the tail of a third, is no unusual combination, provided marked and brilliant contrasts can be secured. Fig. 1 shows the stuffed body of a Cedar-bird, its wing-feathers being tipped with bright scarlet, and finished off with



Fig. 3.—ORNAMENT OF BLUE JAY, ETC.

the long, sickle feathers of a Black Spanish cock. These tail-feathers are not drawn of their proper length, to save room. The desire seems to be to get strong colors, and it is said that a great many

of the parrots kept by the bird-dealers have been bought up and slaughtered by these makers of feather ornaments. Birds of brilliant plumage, such as the Searlet Tanager and the Oriole, which formerly sold to the bird-stuffers at 20 cents, now sell to the feather workers for \$1.00. Individual feathers are worked up in the form shown in fig. 2. A pasteboard form is made, and feathers of different kinds and strongly contrasting colors are sewed on in successive layers. Feathers of fowls and geese are worked in, and we doubt not some of the brilliant plumage of the pigeon and turkey may come in play. What may be called the tail of this artificial bird is furnished with some long feathers, and what should be the head is finished off with a velvet bow. The *outré* ornament in fig. 3 is made of a Yellow-bird with expanded wings, and furnished with a tail made up of cock's feathers, from which the plume has been stripped, except at the tips. This is worn upon the hat directly in front. We do not approve of shooting useful birds for such purposes; but if any of our readers have showy feathers, we give them this hint for making them up according to the prevailing fashion.

The Table—Order and Ornament.

It was Dickens, we think, who said he could always judge of the character of a hotel by the condition of the Caster.—Now, do not quarrel about the spelling of the word, for we have looked into both the W's, and are sure that *er* is right and not *or*. We should like to write *Castor*, but both W's forbid.—If Dickens was right in his estimation of public houses by this standard, it is, we think, a good one to apply to private tables, and it is fair to judge a housekeeper by her *caster*—to which we may add the salt-cellar. Salt, pepper, and vinegar, are needed at most meals, and besides these oil, mustard, catsup, and other sauces, are more or less used. Let us take up these things as a matter of order. In the first place the salt-cellar and the *caster* should never be put away until they have been properly replenished for the next meal. We say *never* with an emphasis, for nothing is more annoying than to find that there is no pepper or vinegar in the cruets, and it is in just these little things that the housekeeper shows her tact. Let us discuss these condiments. In the first place there is salt. Good salt should have no smell, and it should not become moist, no matter how "muggy" the weather. If salt shows either of these defects, try some other brand, or some other store, and insist upon good salt, not only for butter but for table use. It is to be had. Pepper is the next article of importance. Outrageous adulterations are practiced in the grinding of pepper and other spices, yet it is very inconvenient to do it one's self. Demand of the retailer that he shall furnish you a good article, and he will soon find out where to get it. Most of us who live near cities use white pepper. The black pepper is soaked in water until it loses its useless black skin, and then the grain is ground. It costs a little more, but it is neater in the *caster*, and does not blacken the food. Of course this is a refinement which only those near large cities can practice; but good, straight-ahead black pepper, if it be pure, is good enough. Vinegar is the condiment next most in use. Get good cider vinegar, and it will be the better the longer it is kept. Cider vinegar has an aroma, a fragrance, about it that belongs not to wine, whiskey, or any other vinegar. It is very true that the name vinegar means sour wine, but give us sour cider in preference. Sugar, or molasses and water, and many other things, will make a sour liquid which may be called vinegar, but nothing can equal that made from apple juice. *Oil*. Many people do not use oil. Do not put it in the *caster* unless it is good—emphatically good. To those who use oil there is nothing more annoying than that of a poor quality. Better omit it altogether, than to present an indifferent article. *Mustard*. There are two kinds of mustard, so distinct that they should be called by two different names. The strong, biting English or American mustard is best known. The

powdered mustard is mixed with cold water, and sometimes a little salt is added. This is the common mustard upon our tables. The Germans and French have a way of preparing mustard in which much of its pungency is modified by spices. If any of our German readers can give us a recipe for this manner of preparing mustard, we should be glad, as we believe that no one who has once tried it would willingly take the other kind. *Catsup and Sauces*. These are not considered as necessary in the *caster*. Catsup, if properly made of tomatoes, is too thick and unmanageable to get through the narrow neck of a cruet, and it is better to put it upon the table in a separate bottle. The same with Worcestershire and other sauces that may be fancied. It is a great deal better to have a common, black bottle for catsup, from which those who desire it can get some, than to have an elegant cut-glass cruet into which the catsup has been introduced with a difficulty only to be equaled by that experienced by those who attempt to get it out.

An Overworked Farmer's Wife.

There comes from Columbia Co., Oregon, the following, which seems to be so truthful a setting forth of the condition of many a farmer's wife that we give it place, not only in the hope it may call out some help for the writer, but also that unthinking "men folks" may see how the daily life of a hard-worked woman reads in print. The writer says: "There is an article in the April No. of your paper by Mrs. H. M. K., Columbia Co., Pa., in which she tells how the house and dairy-work *should* be done, and I must say her plan is a very good one; but will she, or any one else, tell me how to have things go on smoothly; keep one's self, children, house, and dairy, in good order where there are *not* two women to do the work, and where hired help expect large wages and but little work? Where the churning is not done by machinery and there are no children large enough to be of any service, but where all the house and dairy-work, skimming milk, churning and working butter, washing milk-pans, house-cleaning, washing, ironing, dish-washing, making, mending, baking, etc. (to say nothing of three little ones and three men with an occasional hired man to wait upon), must be done by one pair of weary hands, and one weary heart must bear all the complaints when it is not all done? I say if any one can tell me how all this can be done by one woman, and she in very poor health, I shall be glad to hear from him or her. But if it cannot be done (and I am inclined to think it cannot, for I have tried for the last three years), then please tell me what part to leave undone, for I cannot decide. If I neglect myself, I am liable to be considered slovenly; if I neglect my children, I am thought an unfeeling mother and that the children are taught slovenly habits; if I neglect the buttons on the men folks' clothes they are sure to break one of the commandments; if I neglect the washing or ironing, there is a general hubbub when clean clothes are wanted; if I neglect the house-work I am called a poor housekeeper; if I neglect the dairy-work I cannot get the extra price for my butter that I am accustomed to (and I tell you, it is very flattering to receive five cents above the common market price for your butter); or, if I have visitors, which shall I neglect—my work or my company? If tired nature gives way (as is the case pretty often of late), and I am obliged to give up for a time, how am I ever to overtake my work again? Now, if any one will tell me all these things, I shall be very thankful."

Bills of Fare for Autumn.

[A year or more ago we gave a series of bills of fare for each day in the week for spring and summer. The manuscript for the other seasons had been mislaid, and as it now turns up we give a bill of fare for a week in autumn. The lady who furnished these does not of course expect that any one will strictly follow them, but offers them as

suggestions to help the housekeeper answer the ever perplexing question "What shall we have to eat?" There are articles mentioned which are only to be obtained when one is near a market. Still it is easy to substitute something else for these, and we doubt not that many will find them useful.—Eds.]

MONDAY.—Breakfast.—Fried pork, fried onions, corn bread, baked potatoes, coffee....**Dinner.**—Stewed mutton, boiled rice, stewed tomatoes, baked potatoes, peach pie....**Tea.**—Stewed pears, rye bread, ginger cookies, tea.

TUESDAY.—**Breakfast.**—Roast corn, mutton chops, baked potatoes, sliced tomatoes, dry toast....**Dinner.**—Baked pickerel, mashed potatoes, baked tomatoes, squash, batter pudding....**Tea.**—Baked quinces, egg puffs, pot cheese, mountain cake, tea.

WEDNESDAY.—Breakfast.—Mock oysters, scrambled eggs, fried potatoes, hot rolls, coffee....**Dinner.**—Broiled chicken, boiled corn, baked sweet potatoes, pickled peaches, celery, bread, grapes, melons, peaches....**Tea.**—Raised bisuits, baked apples and cream, smoked halibut, bread cake.

THURSDAY.—**Breakfast.**—Fried sweet-breads, toasted bread, fried sweet potatoes, baked sour apples, coffee....**Dinner.**—Bean soup, beefsteak, boiled corn, baked Hubbard squash, boiled potatoes, pickled peppers, squash pie....**Tea.**—Stewed grapes, short-cakes, tea, cake.

FRIDAY.—Breakfast.—Cold boiled pork, coffee cake, baked sweet potatoes, coffee....**Dinner.**—Corned white-fish and cream sauce, mould of mashed potatoes browned, sliced tomatoes, boiled corn, Lima beans, peach Indian pudding....**Tea.**—Rye and Indian bread, cider apple sauce, baked pears, crullers, tea.

SATURDAY.—Breakfast.—Pork steak, boiled potatoes, fried apples, corn dodgers, coffee....**Dinner.**—Roast leg of pork, boiled sweet potatoes, cabbage in cream, cider apple-sauce, celery, piccalilly or mixed pickle, poor man's plum pudding....**Tea.**—Cold roast pork, pickled pears, soft jumbles, fresh bread and butter.

SUNDAY.—Breakfast.—Fried chicken, baked potatoes, bread and butter, coffee....**Dinner.**—Mock venison, i. e., leg of mutton spiced, stuffed, and roasted, jelly sauce; celery, mashed potatoes, stewed tomatoes, Marrow squash, Eve's pudding, apples, grapes, popped corn....**Tea.**—Soda bisuits, cold tongue, canned strawberries, silver cake, tea.

Cleaning Coat Collars.

"Mary," Rochester, Minn., writes: "Can you spare room in your columns to enquire if any thrifty housewife will tell us how to cleanse our husbands' coat collars? Soap and water, we all know, will do it; but the men complain that this fades them. Will some one who knows show us a better way?"

Coat collars become soiled by coming in contact with the hair, which is naturally oily, or is by some made so artificially. This slight greasiness upon the collar gathers fine dust, and the two together form a mixture disagreeable to look upon and difficult to remove—especially if allowed to accumulate and harden. It is best to clean the collar frequently. Very strong alcohol or benzine may be used. In either case do not work near a lamp, for fear of accidents. If any of our readers can suggest anything better, we shall be glad to hear from them.

Vinegar—Acetic Acid.

Several letters show us that the composition of vinegar is not understood. One asks: "Does acetic acid assist in making cider vinegar, or is it hurtful?"—Vinegar owes all its value to acetic acid, and is that acid in a diluted state more or less impure. As vinegar is made by the process of fermentation, it comes from the conversion of alcohol into acetic acid. It may be made directly from alcohol, or from solutions containing sugar, which will produce alcohol. Cider and other fruit juices, as well as solutions of molasses and sugar, have the

sugar they contain first converted into alcohol, and this, by another fermentation, produces acetic acid. So acetic acid is the very ingredient which makes the liquid vinegar, and in the diluted form in which it there exists is not only not hurtful, but is generally considered a wholesome condiment. Acetic acid may be produced in other ways than by fermentation. That which is used in the arts is largely prepared by the distillation of wood. This is, however, rarely, if ever, used to make table vinegar. The colorless vinegar known as "wine vinegar," so much used by the pickle makers, is prepared from dilute alcohol, usually in the form of whiskey. It is quite as wholesome as any other vinegar, but far less agreeable than that made from cider, as it lacks the pleasant aromatic qualities derived from the fruit...."E. K." is troubled by her vinegar turning almost black after it is taken from the barrel. There has probably been some iron in contact with it—may be some nails driven through the sides of the barrel in fastening the hoops. A small amount of iron would discolor the vinegar.

The Pickle Questions.

Judging from our letters, we are a pickle-eating community. The purport of the many letters—all from the West—is, "How can we put up such pickles as are brought from the East?" Our answer is, You cannot readily do it. These "boughten" pickles differ from the home-made mainly in appearance; they are of a fine green color, put in bottles with a handsome label, and in perfectly clear vinegar. In flavor they are altogether inferior to those which can be made in the family. We were once in a pickle factory, and saw an enormous copper caldron full of pickles; the proprietor told us that they were kept there at a heat hardly comfortable to the hand, with the necessary changes of water until every trace of salt was extracted, when they would be of a beautiful green and ready for the vinegar. We do not know that this is the practice of all pickle factories, but this was that of a large and successful one. The vinegar used was the "wine" or whiskey vinegar, referred to in another article. Pickles prepared in this way are very showy upon the table, but we prefer the honest home-made thing, even if it is not quite so green. We add two recipes from correspondents. Mrs. A. Coffinberry, St. Joseph's Co., Mich., says:

"For one barrel of pickles take three pails of pure rain-water, three quarts of salt, and one pound of alum. Dissolve the salt in the water; dissolve the alum in a separate vessel and mix with the brine. The pickles should be washed clean before being put into the brine, and stirred briskly with the hand every day until fermentation takes place, and a white scum begins to form on the surface of the brine; then spread over the pickles a cloth, place on this a board nearly fitting the barrel, and on the board a weight sufficient to keep all covered with the brine. When more pickles are added, the cover and cloth must be removed and thoroughly washed before being replaced. When the barrel is full, the cover and weight may be replaced and left to stand for use. I have kept pickles in this manner perfectly sound and crisp for two years. Pickles kept in this way need no soaking; they may at any time be taken from the brine, washed, and put immediately into vinegar.

"I have had excellent pickles on my dinner table three hours after they were removed from the brine. If from any peculiarity of the season, or from any mismanagement, any of the pickles should be found to soften, at once remove all from the brine and make a new one, and I will guarantee that they will keep for years, if desired. If the brine should evaporate so as to leave the pickles uncovered, make a weak brine of salt and water, and pour enough over them to keep them well covered."

Yellow Pickle.—"H. E. E.," Angelica, N. Y., sends us the following:

"A 5-gallon jar two-thirds full of the best vinegar, 2 lbs. of ground mustard, 2 lbs. of white mustard seed, 1 lb. of black, do., ½ lb. of race (root) ginger

pounded fine and tied in a bag, 2 oz. of celery seed, 15 cents' worth (probably 2 oz.) of turmeric in a bag, tarragon and mace, green and red peppers to the taste, 1 doz. lemons cut in rings, horse-radish cut in rings; alum, size of walnut; and all kinds of vegetables, such as small beans, radish pods, nasturtiums, small ears of green corn, cauliflower, small cucumbers, large cucumbers cut in rings, cabbage quartered, scalded in weak brine, and laid in the sun to dry and bleach. The jar is to be kept in the sun as much as possible, and stirred every day; also rubbing the turmeric bag. The vegetables should be put into brine for 24 hours before putting them into the pickle."

How to Use Sour Bread.

It has been well said that "accidents will happen in the best regulated families," and sometimes the bread is sour. Sour white bread is very poor eating, and besides it is not healthful, though exactly why, we will leave the doctors to tell. We know, from well-recognized symptoms, it is not healthful diet, and never eat it, though we eat with relish the German *schwartz Brod*, which, in perfection, should be distinctly sour, but not much so. However, we welcome the appearance of sour white bread, for we can fall back upon rye, which, after all, is our standby, for a day or two, and we know what nice puddings and cakes are in store for us as the sour bread is gradually worked up.

If the bread cannot be used immediately, it should be sliced as soon as it is stale enough, and dried thoroughly in an oven which is cooling off or not hot enough to scorch it at all. It may require to be put in the oven two or three times before it is dry enough to keep.

BAKED BREAD PUDDING.—To a pint of bread crumbs add a pint of milk and let them soak thoroughly; add a second pint of milk, four well-beaten eggs, and salt, sugar, and spice to taste, together with soda enough to correct the acidity of the bread (half a teaspoonful is usually enough); bake half an hour. The number of eggs is arbitrary.

BOILED BREAD PUDDING.—Soak in the same way bread crumbs in milk until perfectly soft, using only enough milk to soften them, add three beaten eggs with salt and a little soda; it should be quite stiff; raisins are an agreeable addition; boil in a cloth three-quarters of an hour, and serve with hot wine sauce.

GRIDDLE CAKES.—Soak the bread as before directed, having an excess of milk; thicken with flour; sour milk may be employed with advantage, but is not necessary; add soda and salt dissolved in milk, being careful not to get in too much soda.

Hints on Cooking, etc.

Carrot Pie.—By Mrs. M. B. D., Suffolk Co., N. Y.—Scrape the skins from the carrots, boil them soft, and rub through a sieve. To a pint of the pulp, put three pints of milk, six beaten eggs, two tablespoonfuls of melted butter, the juice of half a lemon, and the grated rind of a whole one. Sweeten and salt it to taste, and bake in deep pie plates without an upper crust.

Onions and Tomatoes.—Tomatoes are susceptible of being cooked in many ways. To the writer's notion the glorification of tomatoes is to cook them with a little finely chopped onion. Of course there are many who do not tolerate onion under any circumstances, but let those who like both onions and tomatoes try it. The flavor of each, the onion and tomato, seems to modify the other, and the result is, to our individual notion, what James Russell Lowell described poetry to be—"a touch beyond."

Soda Sponge Cake.—By Mrs. R. E. Griffith, Chester Co., Pa.—1 egg, 1 cup of sour cream, 1 cup of sugar, 1 teaspoonful of soda, ½ teaspoonful of cream of tartar, 3 cups of flour; flavor to taste. I sometimes put ½ cup of dried currants and the same of citron or raisins in place of flavoring; either way it is very light and nice while fresh.

BOYS & GIRLS' COLUMNS.

The Doctor's Talks—How to Make a Fire.

In looking at my last "Talk" after it was printed, it seemed to me that the Boys and Girls would not exactly understand how the Indians managed to get a fire by the rubbing of the sticks; so I asked Mr. Roberts, to whom



Fig. 1.—AN INDIAN MAKING A FIRE.

you are indebted for all the nice engravings, to make an illustration which should show the Indian at work; this he has done, and it is given in fig. 1. The method which this engraving illustrates, and which was described last month, is a slow and tedious way of converting motion into heat. The next step is the flint and steel. I suppose that all the boys and girls have seen a flint and steel; still as some of them may not I will describe them. Flint is a very hard stone, and when shaped for use is of the form shown in figure 2. The steel is variously shaped, one of the common Fig. 3.



Fig. 2.—FLINT.

forms being shown in figure 3. When the steel is struck forcibly against the edge of the flint, small particles of the steel are knocked off, and so much motion is converted into heat that these particles become red-hot and actually burn. You may think it a strange thing for so hard a thing as steel to burn. Just go to a blacksmith's or any other mechanic's shop,



Fig. 4.

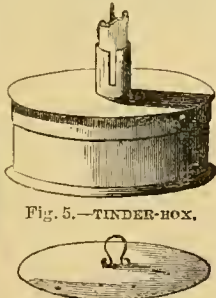


Fig. 5.—TINDER-BOX.



Fig. 6.

where you can get the filings of steel or of iron even, of which steel is only a form, and see how easily they burn. Sprinkle some of these filings upon a candle flame or a gas flame, and see what brilliant sparks they will make, as in fig. 4. Iron and steel filings are much used to give brilliancy in fire-works. Each blow of the steel against the flint knocks off small particles, and here, as in the



Fig. 7.—STRIKING FIRE.

case of the sticks used by the savage in making a fire, we have the force used converted into heat. That heat is sufficient to burn the small particles knocked off from the steel. Now there must be some way of making this heat, these burning particles of steel, useful in getting a fire. In olden times—perhaps your fathers and mothers can recollect them—every family had a tinder box. Such a thing is not known in the household at the

present time, but your grandmothers all had one. A shallow tin box, fig. 5, about 5 inches across and 2 or 3 inches deep, had a cover with a socket upon it to hold a candle. When this was opened, it was found to contain a disk or round piece of tin, fig. 6, which fitted exactly to the inside of the box, and pressed down upon the tinder. Now we begin to get at the way of using the sparks made by the flint and steel. What boy or girl of our time ever saw *tinder*? We doubt if any of them ever did; yet it used to be, before the introduction of the present style of matches, an important article in the household. It was made by burning rags, and when they were well charred extinguishing them. Thus a lot of rags would be burned in the tinder-box, and when they were well alight they would be extinguished by putting on the disk, fig. 6, which would put out the flame and leave a light charcoal ready to catch fire at the slightest spark. It was these charred rags, this tinder, that served our grandmothers. They opened the box, struck the steel against the flint, as shown in fig. 7, and soon a spark, a bit of burning steel, fell upon the tinder and that caught fire. What next? A spark in the tinder would not make a fire. Then there had to be brimstone matches at hand. Many a farmer's boy has made these. He has split straight-grained pine into slivers, and made these matches by dipping their ends into melted sulphur or brimstone, which is the same thing. Somebody in-



8. 9.

vented a plane which would turn out a curled shaving, and in the early days when brimstone matches used to be sold, made quite a revolution in the trade. Bunches of slivers with brimstone on their ends, like fig. 8, stood no chance in the market against the light curled shaving shown in fig. 9. *Click-click*, went the flint and steel, the sparks caught in the tinder, then the tinder was blown to make sure of the fire, and then a brimstone match of one or the other kinds we have described was applied, and if all went well a fire was obtained. This is the way our grandfathers used to get a fire.

"The One that Watches the Sheep Will Win the Wool."

At a large manufactory of jewelry in New Jersey two young men were once working in the same room and earning equal wages. A foreman being required for that department one of the two received the appointment. Six months after, he rose to be foreman of the whole factory. While he was holding this position one of the two members of the firm suddenly died, and the remaining partner, soon finding the cares of sole-proprietorship too heavy, called his young foreman to a partnership in the business. Only three months afterward his unexpected death left sole owner and manager the young man only eighteen months before a humble journeyman. His former work-fellow still toils at the same table, a journeyman still, envying his fortunate shop-mate, and cursing his own "miserable luck."

Yet, in fact, "luck" had nothing to do with it. The different fortunes of the two men are fully accounted for by their characters. Both were strictly sober, skillful, and industrious. But one was watchful of the employers' interest, the other careless. One was in the habit of leaving work a day as often as he chose; the other was ever at his post, no matter what picnics, parades, ball-matches, or target-shootings took place. One dropped his tools on the instant of the six o'clock whistle, the other stayed to finish his job. One refused to do overwork when orders were pressing, because "he wouldn't be imposed upon;" the other was always willing to do whatever he was called upon to do. He won his promotion by giving his whole heart to his trade. Devoting himself to the business as thoroughly as though it were his own, he made it his own.

His history reminds us of the saying of an old shepherd, to the boy who complained that his companion had left him to tend the sheep alone. "Never mind, my boy, if you watch the sheep, you'll win the wool." "Seest thou a man diligent in his business? He shall stand before kings, he shall not stand before mean men," wrote the wise man of olden time.

Boys, don't be afraid of work, don't talk too much of your rights, and think too little of your duties. Whether your place is on the farm or in the factory, behind the counter or the desk, faithfulness there will be a round in the ladder lifting you higher.

One day last month Willie Brewster, of Iraaburgh, Vt., a lad 16 years old, harrowed with a span of horses 11 acres of ground, and after putting up his team went one mile through mud and water after the cows, drove them home and milked nine of them. A pretty good day's work for a boy.

Ways of Getting a Living—Street Beggars.

The stranger who visits New York will probably see in his walks a woman with a most pitiful expression sitting on some step. She has a young child sleeping in her arms and probably one or two more at her side; the poor things, apparently overcome with fatigue, have clung to their mother's side and have fallen asleep too. This is a picture calculated to arouse sympathy, and the stranger puts his hands in his pocket to find some change for this suffering woman and her dependent children. Put your hand in your pocket—and keep it there while we tell you that this is all a sham, or, as the police say, "a put up thing." Go by the place to-morrow, and day after day for a week, pass by in the morning and evening, and there will be the woman and the children in the same attitude and asleep. The children are drugged to insensibility, and are used as a stock in trade by the woman. They are in all probability neither of them hers, but are hired by her. Did she sit there alone she would excite but little sympathy, but with the group of children she becomes a noticeable object, and those who do not know the trick naturally give alms. It is said by those who know about such matters that children are not only hired out for begging purposes, but—horrible to state—actually maimed and crippled for the purpose of exciting sympathy. The miseries of low life



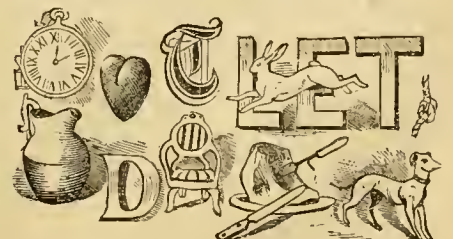
in large cities have not half been told, and yet these same wretches, if offered transportation to the country and a home, would not accept it if they must work for a living.

New Puzzles to be Answered.

No. 359. *Word Puzzle*.—What word is there of seven letters that means a woman particularly noted; decreased by three letters leaves a man particularly noted; decreased by one letter leaves a personal pronoun, feminine gender; decreased by one letter again leaves a personal pronoun of the masculine gender.

No. 360. *Mathematical Enigma*.—My 1st is 1-6th of a guinea. My 2d is 1-5th of an ounce. My 3d is 1-11th of a barley-corn. My 4th is 1/3 of a rod. My 5th is 1/4 of a bale. My 6th is 1-9th of a solid yard.

No. 361. *Charade*. My first takes reason from her throne, And leaves frenzied fancy to reign alone; My second 's a certain kind of grain, Often joined with an aboriginal name; My third what girls were called in other days And the sign of 4 qts., the Arithmetic says; If you join these syllables parted again, My whole will make a vocal strain.



No. 362. *Illustrated Rebus*.—Something to be heeded.



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DEFIANCE.—AFTER PROF. SUIJS, DUSSELDORF.—Published by Permission of Edmund Förster & Co., 54 Maiden Lane.

The old hen had sat patiently, and at last her care was rewarded by some squatly, downy things with broad bills and which made a sound unlike the chicks she had been accustomed to raise. They were ducklings; still she cared for them as if they had been chickens. They would come quickly enough if she called them to food, but were slow to obey her summons to hover. Soon these ducklings began to disregard the calls of the old hen altogether, and at last concluded that they would go off by themselves and see the world. They had paddled in the water pat for them to drink, and knew that there was more water somewhere to be found. The old hen clucked and gave her strongest warnings, but the broad-bills did not mind these—they started for the water. What they saw there the artist has shown. A green monster with prominent eyes and capacious mouth met them at the very entrance of that new region they were seeking. The artist has certainly shown the astonishment of the ducklings at this unexpected meeting, but he does not let us know whether they risked the dangers before them or went back to the care of the motherly old hen. It has always seemed to us that a duckling hatched by a hen is the most ungrateful of animals. It may be said that the hen is not the ducklings own mother. But we have seen boys and girls, who have received every benefit from those who were in no wise related to them, who would be quite as wayward and as disregarding of advice as the young ducks are to the clucking of the old hen, and are bound to see the world for themselves. It would have been well for them had they met such a surprise at the start as did the ducklings in the picture.

“Del.” and “Sc.”—One who is evidently not a juvenile writes, asking what these abbreviations mean

when attached to engravings. We answer him through these columns, as it is something which Boys and Girls ought to know. In earlier times all works upon science and art were written in Latin, that being the language of the learned in the days when there were no such things as common schools and popular education. Things are now wonderfully changed, but still some of the old Latin terms are retained. If you see at the bottom of an engraving, John Smith, Del., that “Del.” is an abbreviation of *Deliniavit*, the Latin for “he drew it.” If on another place you see Joseph Jones, Sc., it means that Jones he cut or engraved it—*Sculpsit*. Sometimes on pictures will be found *Pinxit*, or *Pinxit*—which stand for *Pinxit*, he painted it. Perhaps the differences between drawing, painting, and engraving, are not well understood by our young friends. Some years ago—so long ago that our young friends have become old ones,—we gave an account of the whole matter. No doubt a description of the way in which engravings are made would interest our young readers, and we shall before long endeavor to get our engravers to prepare some illustrations which will show them the way in which pictures are made, and at the same time enable them to understand more about the “Del.,” “Sc.,” and “Pinxt.”

Only a Pebble.

A lady in Vineland, N. J., sends us a pebble about as large as a Lima bean, which is a piece of a very hard mineral—quartz. Quartz is one of our most common minerals, and appears in the greatest variety of forms. The purest sand is quartz with a little coloring matter. It is often found milky white, again granular and “crumbly” like loaf sugar, and again as transparent as glass. It is often found in the form of beautiful crystals, and

when these are colored purple they are called amethysts. Boys and Girls should make collections of all the various stones and rocks that are found upon the farm and try to learn something about them. In most localities they will find nine out of ten of their specimens to be some form of quartz. But this pebble, hard enough to scratch glass, is worn as smooth as a bean, to which we have compared it in size. It was found inland, far from the sea. What rubbing and rolling it must at some time have had to bring its hard surface to such a shape! Possibly before the human race was created this little pebble was ground to its present shape and now comes to us to tell of an age farther in the past than we can think. It is only a little pebble, yet could it tell its history what a marvellous one it would be! What force separated it from the mass to which it belonged? What countless rollings of the surf of a now unknown sea rounded it! When the bones of some mammoth animal of former ages are found, there is a great wonderment, and the learned write long articles about them. Yet the pebbles are by thousands all around us, and each one of them really as wonderful as the mammoth, if we look at it aright. It is not always the largest things that are best worth thinking of. The light of the little fire-fly is quite as much of a puzzle as that of the sun. The tiny moss is thought as interesting by the botanist as the largest oak tree. Each little pebble has a history, every leaf is a wonder, every flower speaks to us and asks us to admire its structure. Happy is the child who loves pebbles, plants, birds, and insects, and can find pleasure in watching them and learning about them. They will all teach him or her some lesson, and in admiring the beauties of creation they will learn to revere the Creator who has filled the world with such variety and beauty.

"THE BEST JUVENILE MAGAZINE EVER PUBLISHED IN ANY LAND OR LANGUAGE."

OUR YOUNG FOLKS.

The Conductors of OUR YOUNG FOLKS are constantly receiving the most hearty assurances from all parts of the country, that the Magazine is liked this year even better than ever before. The *practical* and *instructive* articles are found to be exceedingly entertaining as well as valuable. MR. HALE'S delightful series of papers, suggesting *How to Read, How to Talk, etc.*; MRS. AGASSIZ'S graphic and thoroughly reliable articles on *Coral Animals* and the *Reefs* they build; MR. TROWBRIDGE'S vivid descriptions of *Glass-Making* and *Coal-Mining*; MR. BOXE'S excellent *Historical* articles; and MR. PARTON'S account of the discovery of the *Canary Islands*, and other articles, have won the highest praise from their hundreds of thousands of readers.

There are the best of Stories also for Boys and Girls; and gray-beards confess to reading MR. ALDRICH'S "*Story of a Bad Boy*," with as great delight as their grandchildren. From the October number of the Story we extract a few pages telling how

A FROG HE WOULD A-WOOING GO.

If the reader supposes that I lived all this while in Rivermouth without falling a victim to one or more of the young ladies attending Miss Dorothy Gibbs's Female Institute, why, then, all I have to say is the reader exhibits his ignorance of human nature.

Miss Gibbs's seminary was located within a few minutes' walk of the Temple Grammar School, and numbered about thirty-five pupils, the majority of whom boarded at the Hall,—Primrose Hall, as Miss Dorothy prettily called it. The Primroses, as we called *them*, ranged from seven years of age to sweet seventeen, and a prettier group of sirens never got together even in Rivermouth, for Rivermouth, you should know, is famous for its pretty girls.

There were tall girls and short girls, rosy girls and pale girls, and girls as brown as berries; girls like Amazons, slender girls, weird and winning like Undine, girls with black tresses, girls with auburn ringlets, girls with every tinge of golden hair. To behold Miss Dorothy's young ladies of a Sunday morning walking to church two by two, the smallest toddling at the end of the procession like the bobs at the tail of a kite, was a spectacle to fill with tender emotion the least susceptible heart. To see Miss Dorothy marching grimly at the head of her light infantry, was to feel the hopelessness of making an attack on any part of the column.

She was a perfect dragon of watchfulness. The most unguarded lifting of an eyelash in the fluttering battalion was sufficient to put her on the look-out. She had had experiences with the male sex, this Miss Dorothy so prim and grim. It was whispered that her heart was a tattered album scrawled over with love-lines, but that she had shut up the volume long ago.

There was a tradition that she had been crossed in love; but it was the faintest of traditions. A gay young lieutenant of marines had flirted with her at a country ball (A. D. 1811), and then marched carelessly away at the head of his company to the shrill music of the fife, without so much as a sigh for the girl he left behind him. The years rolled on, the gallant gay Lotiario—which was n't his name—married, became a father, and then a grandfather; and at the period of which I am speaking his grandchild was actually one of Miss Dorothy's young ladies. So, at least, ran the story.

The lieutenant himself was dead these many years; but Miss Dorothy never got over his duplicity. She was convinced that the sole aim of mankind was to win the unguarded affection of maidens, and then march off treacherously with flying colors to the heartless music of the drum and fife. To shield the inmates of Primrose Hall from the bitter influences that had blighted her own early affections was Miss Dorothy's mission in life.

"No wolves prowling about my lambs, if *you* please," said Miss Dorothy. "I will not allow it."

She was as good as her word. I don't think the boy lives who ever set foot within the limits of Primrose Hall while the seminary was under her charge. Perhaps if Miss Dorothy had given her young ladies a little more liberty, they would not have thought it "sneak fun" to make eyes over the white lattice fence at the young gentlemen of the Temple Grammar School. I say perhaps; for it is one thing to manage thirty-five young ladies and quite another thing to talk about it.

But all Miss Dorothy's vigilance could not prevent the young folks from meeting in the town now and then, nor could her utmost ingenuity interrupt postal arrangements. There was no end of notes passing between the students and the Primroses. Notes tied to the heads of arrows were shot into dormitory windows; notes were tucked under fences, and hidden in the trunks of decayed trees. Every thick place in the boxwood hedge that surrounded the seminary was a possible post-office.

It was a terrible shock to Miss Dorothy the day she unearthed a nest of letters in one of

the huge wooden urns surmounting the gateway that led to her dovecot. It was a bitter moment to Miss Phœbe and Miss Candace and Miss Hesba, when they had their locks of hair grimly handed back to them by Miss Gibbs in the presence of the whole school. Girls whose locks of hair had run the blockade in safety were particularly severe on the offenders. But it did n't stop other notes and other tresses, and I would like to know what can stop them while the earth holds together.

Now when I first came to Rivermouth I looked upon girls as rather tame company; I had n't a spark of sentiment concerning them; but seeing my comrades sending and receiving mysterious epistles, wearing bits of ribbon in their button-holes and leaving packages of confectionery (generally lemon-drops) in the hollow trunks of trees,—why, I felt that this was the proper thing to do. I resolved, as a matter of duty, to fall in love with somebody, and I did n't care in the least who it was. In much the same mood that Don Quixote selected the Dulcinea del Toboso for his lady-love, I singled out one of Miss Dorothy's incomparable young ladies for mine.

I debated a long while whether I should not select *two*, but at last settled down on one,—a pale little girl with blue eyes, named Alice. I shall not make a long story of this, for Alice made short work of me. She was secretly in love with Pepper Whitcomb. This occasioned a temporary coolness between Pepper and myself.

Not disheartened, however, I placed Laura Rice—I believe it was Laura Rice—in the vacant niche. The new idol was more cruel than the old. The former frankly sent me to the right about, but the latter was a deceitful lot. She wore my nose-gay in her dress at the evening service (the Primroses were marched to church three times every Sunday), she penned me the daintiest of notes, she sent me the glossiest of ringlets (cut, as I afterwards found out, from the stupid head of Miss Gibbs's chamber-maid), and at the same time was holding me and my pony up to ridicule in a series of letters written to Jack Harris. It was Harris himself who kindly opened my eyes.

"I tell you what, Bailey," said that young gentleman, "Laura is an old veteran, and carries too many guns for a youngster. She can't resist a flirtation; I believe she'd flirt with an infant in arms. There's hardly a fellow in the school that has n't worn her colors and some of her hair. She does n't give out any more of her own hair now. It's been pretty well used up. The demand was greater than the supply, you see. It's all very well to correspond with Laura, but as to looking for anything serious from her, the knowing ones don't. Hope I have n't hurt your feelings, old boy," (that was a soothing stroke of flattery to call me "old boy,") "but 'twas my duty as a friend and a Centipede to let you know who you were dealing with."

Such was the advice given me by that time-stricken, care-worn, and embittered man of the world, who was sixteen years old if he was a day.

I dropped Laura. In the course of the next twelve months I had perhaps three or four similar experiences, and the conclusion was forced upon me that I was not a boy likely to distinguish myself in this branch of business.

I fought shy of Primrose Hall from that moment. Smiles were smiled over the boxwood hedge, and little hands were occasionally kissed to me; but I only winked my eye patronizingly, and passed on. I never renewed tender relations with Miss Gibbs's young ladies. All this occurred during my first year and a half at Rivermouth.

Between my studies at school, my out-door recreations, and the hurts my vanity received, I managed to escape for the time being any very serious attack of that love fever which, like the measles, is almost certain to seize upon a boy sooner or later. I was not to be an exception. I was merely biding my time. The incidents I have now to relate took place shortly after the events described in the last chapter.

The price of OUR YOUNG FOLKS is \$2.00 a year. The first four numbers for 1869 will be sent free to any person wishing to examine the Magazine, on application to the Publishers,

FIELDS, OSGOOD & CO., Publishers, Boston.

Peach Tree Diseased.—"P. E. G.," Lancaster Co., Pa. If the tree has the yellows, it may be known by the weak growth and the yellow color of the leaves. There is probably no remedy for it. As the fruit is frequently wormy, the failure may be due to insects, added to exhaustion from over-bearing. If the case is decidedly one of yellows, it is better to destroy the tree at once than to risk the disease being communicated to other trees.

Osage Orange in Iowa.—F. L. Warner, Floyd Co., Iowa. The probabilities are against the hardiness of the Osage Orange in lat. 43°, but the degree of latitude is no sure indication of the character of the climate. The plants will continue to grow until checked by the frost. They are then mowed over near the ground, dug up (or plowed up if the quantity is large), tied in convenient bundles, and stored in a cellar, with a covering of earth, or buried outside in a place where water will not stand, and below the reach of frost.

Keeping Plants.—Mrs. E. M. Allen, Marion Co., West Va. When cold weather comes, put the Fuchsia in the cellar. The Geraniums will keep in the cellar if not too damp. It is best to cut them back well. Your roses are bardy, and may be left out all winter.

Lima Beans.—Mrs. E. M. A. picks the beans as soon as the pods begin to turn, and strings them on twine. The strings are hung in the sun or around the stove. She finds that they dry better in the pod than when shelled.

Bermuda.—A. Barton. Steamer for Bermuda leaves every third Thursday. Passage, \$30. Board at hotel, \$2 per day, all in gold. Ladies can go alone. We prefer to answer personal queries like these by letter, and the address should always be sent.

Fall Planting.—E. Snyder, Highland, Kas., writes: "While there is no doubt of the advantages of fall planting in some portions of the country, we have a large tract of partially developed country, splendid for fruit, but where failure is almost certain to follow fall planting."—It is probable that this failure is due to the prevalence of drying winds, which are often more injurious to newly set trees than severe cold.

Cabbages.—"E. O. W.," Bethany, Pa. If the leaves turn yellow, examine the root; it is likely that insects are at work, or they have already caused club-foot. There is probably no help for them now.

Ivy Does not Cling.—"J. P. P.," Mercer Co., N. J. Probably the wind blows the plant about, and it does not stay in one place long enough to get a hold. Next spring try fastening it up by small leather shreds, secured by small nails driven into the mortar.

Grasses Named.—M. D. Mudget, Hardwick, Vt. The grass or grain you found with your seed wheat is the Chess, or Cheat (*Bromus secalinus*), about which there is so much talk, and which some people still believe is a degenerate wheat. . . . A. G. Chase, Easton, Kas. The Pungent Meadow-grass (*Eragrostis paxoides*, var. *megastachya*). It is an introduced grass from Europe, and often appears as a weed in cultivated grounds. We never heard of its being put to any use.

Pecan Does not Bear.—"R. L. T.," Rapides, La., has a large Pecan tree which bears full of husks, but no kernels. He proposes to try root-pruning. We should not look for any marked benefit, as the tendency to bear seems well established, which is the object sought for in root-pruning. It may be that there is a deficiency of staminate (male) flowers, or some malformation in the ovary. In either of these cases, root-pruning would be useless. If staminate flowers are not produced—which may just possibly be the case—another tree planted near would remedy the trouble; but if the ovary is defective, no treatment can probably help it.

Are Hickory Nuts Seeds?—R. Woolman. We never had any doubt that a hickory nut was a seed as much as a bean or a turnip seed. The question had reference to a Post-office decision, a Postmaster having refused to take the nuts by mail, on the ground that they were not seeds, but nuts—a most singular ruling, but it was sustained at head-quarters. Perhaps the present officials will take a more intelligent view of the matter, and not construe the law in such a way as to prevent those who wish to raise trees upon the prairies from receiving their seeds by mail. Under the former ruling, potatoes, wheat, and corn, could go in any quan-

tity, and nuts—so far as we have heard—were the only things excluded.

Vegetable Farming in So. Car.—At a meeting of vegetable growers of Charleston Neck, a few weeks ago, it was stated that vegetable farming had ceased to be profitable. Various causes were assigned for this condition of things, among which were bad seed, inadequate means of transportation, and exorbitant commissions. The farmers of Charleston Neck and several other parishes have made arrangements to form a farmers' mutually protective club, to investigate and remedy these matters. The report of their proceedings shows that they have gone to work in a sensible manner, and we shall be glad to hear of their future doings.

Wild Potato Vine.—"E. P.," Stamford, Conn., has his orchard overrun with the Wild Potato (*Ipomoea pandurata*), which is not a potato at all, but a Morning Glory, with a huge root. The writer has one on his place which he pets, and would not have dug up on any account; but he can readily see how there might be too much of a good thing. We should dig up the large roots of the old vines this autumn, and then next year begin a regular fight with the young ones as soon as the sprouts start. The old fellows have laid in provisions enough to allow them to stand a long siege.—Your bird-house we have already published.

Beet Sugar.—Several have asked for information concerning the manufacture of sugar from beets. It is not practicable on a small scale, but requires extensive machinery and large capital. We have a work on the subject by E. B. Grant. Price, post-paid, \$1.25.

California Butter.—J. Berki asks "Why does not California make its own butter?"—We suppose that it is for the want of suitable pasturage. The summer droughts are such that in many portions of the State it is impossible to grow anything without irrigation. The subject is receiving the attention of California agriculturists, and there is no doubt that before long the State will produce its own butter.

Graham Meal.—"L. S.," wishes to know what Graham Meal is. Graham Meal, also called Graham flour, is wheat ground without bolting. It contains not only the flour but the bran. Bread made of this is in some places called Brown Bread, but real New England Brown Bread is a mixture of Rye and Indian meals.

Water for Cheese Factories.—"J. J. M.," Oconomowoc, Wis., asks if all the cheese factories in New York are supplied from springs—adding, "If they are, and if it is essential to success, we shall be obliged to dispense with them in our State. Can they not be supplied with water from some other source?"—In case the water is not cold, coming directly from springs, ice is essential. Ice is a great convenience, even with good spring water, and success with other water would be impossible without it; while with good water, and a well-stocked ice-house, the dairyman may be quite independent of springs.

Horse-book.—An Opinion Given.—"A Friend," writing from Perth, Ont., asks: "Will you please express your opinion, if obtained from thorough examination, about a work advertised in your paper, 'Hints to Horsekeepers,' by the late H. W. Herbert?"—We regard it as the best book we know of, treating briefly, yet comprehensively, of the care of, breeding, training, breaking, and using, horses. "Stonehenge" treats the same subjects much more at length, and the volume contains a treatise of great merit on the diseases of horses. Herbert's work is very modestly called "Hints," when really it is a great deal more, besides being written in a very pleasant style, and well illustrated.

Does Grain Grow in the Shock in Kansas?—E. Topping, Ottawa, Kansas, writes that he notices that a Kansas correspondent of an Eastern agricultural paper, says: "My hay all rotted, barley has sprouted, and wheat is sprouting, and oats cannot be harvested." His own experience is different, as he writes: "I live near the center of the State, and have not heard of a grain of wheat or barley sprouting, but both are of the best quality, and all admit there never was so fine a crop of oats in the country. Although we have had a rainy season, yet there has been good weather enough to save crops in fine order. The last two weeks have been the hay harvest; the crop is now nearly secured, in the best of order, and without a drop of rain. Now I don't see where that correspondent lives. The enclosed slip from a Ft. Scott paper will inform you of the Southern part of the State. Do justice to Kansas."—From the Ft.

Scott Press: "Will some philosopher tell us why wheat will not grow in Kansas while standing out in the shock during four weeks of constant rainy weather? In the climate of Ohio or Wisconsin, half the number of warm, rainy days that we have had during harvest would not have left a grain of wheat unsprouted. Why is it that our wheat has not grown?"

An Apple Growing on a Grape Vine.—"F. M. B.," Kingsville, O., sends us the following: "Enclosed I send you what I think a queer freak of nature, which, as you will observe in the sketch I have hastily prepared, is a combination of an apple and a grape, or nearly a perfect apple on a grape vine. The vine on which this phenomenon occurred runs among the branches of an apple-tree. The skin of this peculiar fruit bears resemblance to both fruits, though quite glossy and of a purplish tinge. At first sight I supposed it to be a protuberance caused by some insect, as I had observed them of different kinds on wild grape vines; but as it was of so peculiar a form I plucked the vine to obtain it as a curiosity, and on looking it over I thought it might be an apple, so I cut it in two and found quite distinctly marked the seed vessels of an apple. The grape is an Isabella; the apple, by some is called the Honey-sweet. This may furnish some information regarding the mixing of fruits."—The above, which was accompanied by a very neatly made drawing, shows how a person quite disposed to investigate a matter may allow himself to be deceived after all. He suspected it was produced by an insect, but cutting it open, found cells, and forthwith concluded it was an apple. Had he examined the contents of these cells he would have found that each one contained a yellowish grub or maggot, and though externally and internally there were resemblances to an apple, the thing was a gall after all. We have seen a number of these galls and they cannot be very rare.

Farm Wanted.—We get a good many letters like the following, but rarely having the merit of such brevity; in fact it is a model: "Dear Sirs:—Will you please be kind enough to inform me of a good, healthy farm (also eminently fertile), which is the most favorable for raising Northern fruit, such as apples, pears, peaches, plums, and grapes, and that can be purchased at a moderate price?"—This is written by a woman, and if the man would write as much to the point, though using twice as many words, they would have our thanks, and many more answers. We cannot help Madame at all. No real-estate office is connected with the *American Agriculturist*. She, and all of her class, as soon as they are ready to break up, sell out, and buy new farms, should state their wants in a concise advertisement in the *Agriculturist* or some other good paper. They would have plenty of responses, we doubt not.

Sap Spouts.—"G. M. S.," of Montpelier, Vt., writes in reply to Young Farmer's query in the September number of the *Agriculturist*: "I have made many thousands of tin and sheet-iron sap spouts, have used cast-iron, wood, etc., but best of all is one that I made and used last year. It is a simple tube, made of DXX tin, ½ inch in diameter, and 3 inches long. I make them on a half-inch rod, and solder them. I use a half-inch bit or auger, and bore the hole from one inch to one and a half inch deep. Such spouts will not injure the trees, will not rust, or be thrown out by freezing, are cheap and durable. Do not use more than one to a tree, unless you would risk scaling and spoiling your trees."

Bee Notes.—By M. Quinby.

A correspondent writes: "I wish to know, 1st, The best plan for building a bee-house. . . . 2d, How to get the bees into it from a hive. . . . 3d, Whether the bees with their queens will agree all in one house. . . . I wish a plan for convenience in getting the honey and to keep the bees from swarming."—I have tried a variety of bee-houses, but none that would pay. Bees do not prosper in them. They are crowded; you cannot get a free circulation of air, nor have the sunlight on them for more than a small part of the day, even if they front the south. I can give no better plans for bee-houses, if any insist on using them, than may be found in "Quinby's Bee-keeping," under the title "Bee-houses." These, however, are merely plans for covered stands, more or less ornamental, so arranged as to accommodate from three to sixteen separate hives. If the author of the questions above means to ask, How shall a number of swarms, workers, queens and all, be made to occupy the same apartment? I presume there is no answer to be given. It probably cannot be done. Whatever the working bees might consent to, in such communities, their insect royalty never would or could submit to it. A queen bee must be all or nothing. England's good queen could as

soon brook a foreign rival on her own English ground, as the jealous queen of a community of bees, another of her own rank within the precincts of her domain. For convenience of obtaining honey and preventing swarming, I would recommend a hive made somewhat as follows: Make movable frames for the combs, as in common movable-comb hives, but let the spaces between the frames, at the top and ends, be closed with strips of tin, forming ends and top of the hive proper, and leaving no space for a current of air to carry off the warmth needed for the colony in winter and spring. No honey-board will be needed, and consequently there will be no space between it and the top of the frames. The frames, by a simple device, may be made to stand directly on the bottom, without being supported at the ends. An outer box should then be made, large enough to enclose the whole, and also give room for surplus boxes at the sides and top of sufficient aggregate capacity to hold 150 lbs. of honey. The boxes for the top are placed directly on the frames; or the space intended for the boxes may be filled with frames instead, thus forming a very large hive; and when the honey is desired for home consumption, this will probably be the cheaper and better way. For winter, the boxes or extra frames are removed, and the space filled with dry hay or straw. The colony can then remain on the summer stand through the winter, with more safety than in even the common box hive. Special care should be given to ventilation by apertures below and above, provided with slides so as to be opened or shut at pleasure. All storms, and cold, driving winds are shut out by closing the entrance at the side, except in the finest weather, when the bees may be allowed to fly.

The Langstroth hive can be converted into one of these when the frames are of a proper size for a sufficient number of boxes, and the extra trouble of handling the frames is not considered much. The hive should be made double width, and the combs and bees transferred, and boxes set by the side of the combs, as in the other. By transferring, certain advantages may be secured, viz.: straight combs, and combs containing only worker cells—except a few for drones to pacify the bees.

The hive thus far described, I consider the best for surplus honey yet brought before the public. It is also a partial non-swarmmer. To make it entirely so, I use the following device: Nail together strips of board to make a box about eighteen or twenty inches square, and three inches deep, with floor of thin boards, excepting a strip four inches wide, on the side next the hive, which should be of wire-cloth for sifting out dust, and for ventilation. To prevent the queen, who has previously had her wing clipped, from creeping over and escaping, strips of tin, two inches wide, are fastened around the inside, at the top, parallel to the floor, and as she is unable to hold fast to the under side, she will fall back, and after a few trials, return to the hive with the swarm, that will not go far without her. The upper side of the tin should be painted some light color. An opening, corresponding to the entrance to the hive, should be made on the side toward the hive.

Owing to the great scarcity of honey, a great deal of feeding—probably more than at any time for twenty years past—will be necessary. As to methods, see directions already given in the *Agriculturist*. If a swarm has not made comb enough to hold sufficient honey for winter, it will hardly pay to feed. But in other cases, it should begin as soon as the brood is hatched—in the early part of this month—and be continued as rapidly as possible until finished. By this means the bees will be able to store the material and seal it before cold weather.

Editorial Correspondence.

Notes of Travel in the West

[Mr. Judd has been taking a vacation from business, in traveling with his family at the West, and is now tarrying awhile in Central Iowa. We present below some excerpts from his letters home.—Eds.]

CHICAGO.

"...Chicago has materially changed during my absence of six years. Its streets are greatly improved; a large increase in the number and growth of the trees gives a far more cheerful aspect to the whole city as one looks down upon it from any elevated building; the business houses, churches, and dwellings, are on a larger scale and in a higher style; large parks are provided for, and some of them begin to give promise of future beauty. A ride of 15 miles through the outskirts, including the extensive cattle yards, some five miles south-west of the business center, gave visible evidence that Chicago is rapidly extending its inhabited territory far outward north, west, and south. The wooden pavements, in more general use here than in any other city, give a freedom from noise and dust greatly to be coveted

by the denizens of New York. Whatever may be their durability or cost as compared with stone, they might be profitably adopted, at least in all the thoroughfare streets."

THE UPPER MISSISSIPPI.

"...After this, my second trip of 335 miles, from Dubuque to St. Paul and the Falls of St. Anthony,—this time after having been twice up and down the Rhine, and many times on the Hudson—I am certain that the Upper Mississippi far excels those two noted rivers, in grand and interesting scenery. The broad Valley is bounded by high hills and bluffs, often in grotesque rocky piles and cliffs; the stream, sometimes a single body of water, is more frequently divided into from two to a dozen or more channels and sloughs, that inclose almost innumerable islands of every conceivable form—all covered to the water's edge with a deep green herbage, shrubby or trees. Lake Pepin, so called, is an expanse of the river for about 30 miles, to an average width of about five miles of deep water. No one should cross the Atlantic for sight-seeing until he has visited the Upper Mississippi, and 1,200 or 1,500 miles of its lower broad, lake-like current, that meanders gulfward through the immense valley...."

ST. PAUL—MINNEAPOLIS.

"...St. Paul has grown largely since I was here, eleven years ago, and now contains many buildings of very fine architectural design. When its streets are well paved, and other improvements, now contemplated or in progress, are completed, it will be one of the finest cities in the country. An extensive system of railroads, radiating in all directions, is already under considerable headway....Minneapolis, at the Falls of St. Anthony, 14 miles by river, though only 9 miles by land from St. Paul, has a water power equaled by but one or two other places in the civilized world. The largest lumber mills I have ever seen, perhaps the largest on the continent, are located here, and the city has already grown to large proportions. Minnehaha Falls, a most beautiful cascade, and Fort Snelling, 4 and 5 miles down the river, are well worth the tourist's visit. The high, dry atmosphere of this region, as well as the interesting scenery hereabouts, and on the way hither, may well attract a large multitude of pleasure and health seekers. I am much indebted to the kind attention of Judge Crowell, of St. Paul, an old college friend, for the facilities afforded and information given respecting this interesting locality...."

MINNESOTA.

"...This State is rapidly filling up with an enterprising and industrious farming population. The wheat crop of this year is estimated at *twenty million bushels!* And I can partially, at least, endorse the estimate, after riding down through the almost continuous succession of vast fields of splendid grain, which stretch back on either side as far as the eye can see, on both sides of the Milwaukee and St. Paul Railway, which runs south from St. Paul for 70 miles, and curving south-east for 140 miles, crosses the Mississippi at Prairie du Chien, and extends nearly due east 193 miles through Wisconsin to Milwaukee. For good winter wheat, Minnesota is excelled only by Russia, I think. Fifty to one hundred thousand from the older States, and from the northern kingdoms of Europe, can find good, cheap farms in the invigorating, healthful, and health-giving climate of Minnesota."

NORTHERN IOWA.

"...I can hardly advise any well-settled farmer east or south of Ohio to take the ride I have enjoyed over the North-western Railroad, from Chicago to Omaha, 494 miles, lest he should be discontented with his present lot, and instantly 'pull up stakes' and move. For two hundred miles west of Clinton, a thriving new town on the Mississippi, one rides through as fine a region as the sun looks down upon. The country for this distance is mostly occupied by cultivators, though there are many unimproved and improved lands in the market at moderate rates, for a Western man is usually glad to sell and go farther west. Another 125 miles takes one to the junction of the Missouri Valley R.R., extending up to Sioux City (pronounced Soe City). There is considerable unoccupied land along this portion of the road, and particularly in the north-western counties, well worthy the attention of enterprising young Eastern farmers. Twenty-four miles southward from the junction we reach Council Bluffs, opposite Omaha, the beginning proper of

THE PACIFIC RAILROAD.

"...I had not intended to visit the Golden State the present year—a decision I regretted after riding 573 miles west of Omaha, over the Union Pacific R. R. Whatever may be said of the hasty building and imperfection, I have never journeyed over any railroad with more real comfort than I did with my family for twenty-seven hours, from Omaha to Laramie (573 miles). The ordinary cars are very commodious, while a seat by day and a bed at night, in 'Pulman's Palace Car,' is a luxury indeed. (An extra expense of \$3 per twenty-four hours secures a section with four seats, and four excellent beds at night.)

Good dining saloons, at proper intervals, furnish very palatable meals at 75 cents to \$1.25, as you go west. (If the proprietors would pay a few cents more per pound for first quality butter to use with their fine bread and rolls, and in cooking their steaks, mutton chops, and other meats, no one would grumble at the saloon and hotel fare across the continent. I embody the concurrent testimony of all the travelers whose opinions I have expressed, and they were generally outspoken). . . . The Railway gradually and imperceptibly rises on the sloping plain, from an altitude of 966 feet above the sea at Omaha, until, at Sherman Station, 549 miles west of Omaha, the track reaches an altitude of 8,250 feet—2,000 feet higher than the summit of Mt. Washington, in the White Mountains of New Hampshire—the highest point ever reached by any Railroad in the world, I believe. The mountain passes of Switzerland are narrow gorges, shut in by snow-covered peaks on either hand. This pass, over the eastern and highest ridge of the Rocky Mountains, crossed by the Railroad (the Black Hills), is more like a broad valley or plateau, with here and there some rocky ledges, and many piles of bare rocks, which, from their appearance and the enrious forms assumed by them, render the name Rocky Mountains quite appropriate. The towering snow-capped peaks, seen on either hand, are too distant to materially chill the atmosphere. Fine pasturage, and some clumps of growing oats, nearly matured, were seen at the highest point. If I remember rightly, few trees or shrubs and little herbage were seen in Switzerland above an altitude of 4,000 or 5,000 feet...."

THE PLATTE VALLEY.

"...For nearly 300 miles west of Omaha the Pacific Railroad follows up the valley of the Platte River. Through all this distance, and still farther west, the land appears generally good, though few Ranches or farm buildings, except the Railroad stations, are seen after the first 75 or 100 miles. Here is a large country open to settlers, or to be open as soon as surveyed, which is now brought into direct railroad communication with the rest of the world. The alternate sections for 20 miles on each side of the railroad are reserved by Government, and offered to purchasers at the uniform price of \$2.50 per acre. The Railroad Company own the other sections, which are offered at from \$2.50 to \$10 per acre, according to location, nearness to stations, and quality. Mr. O. F. Davis, Land Agent of the Union Pacific Railroad, has opened a land office in Omaha, to give information, and dispose of the company's lands as far as surveyed by Government. I felt greatly tempted to look after one of these sections of land for myself. I am sure there are many fine locations to be secured by the first comers, both from the government domain and the Railroad lands...."

LARAMIE PLAINS.

"...I spent nearly three days at Laramie, in Wyoming Territory, 24 miles west of Sherman, and 1,100 feet lower altitude. This town, of 1,200 to 1,500 inhabitants, supports a Daily Paper, has a fine school building and large school, with organized churches, now worshipping in the school building and elsewhere, but with church plots purchased, and two edifices going up. I attended two Sunday-schools here, and in a little talk with the scholars of one of them, the Union Sunday-school, I found there the representatives of twenty-six States and Territories! (As the town is not two years old, the Sunday-school children were of course all born elsewhere.) There are several hotels, one large, neatly kept, and very good one,—except the charge of \$5 per day, and bating the lack of 'Orange County Butter,' above referred to. This defect will be remedied, probably—and I hope so, for the benefit of the multitude of travelers from our own and other lands, who ought to, and who doubtless will, come hither to enjoy the scenery and the pure, exhilarating atmosphere. I find several sojourning here already, seeking health. Laramie Plains is some 40 miles wide, between the Black Hills on the east, and Medicine Bow Mountain and other ridges on the West. The surface is a rolling prairie, with the Laramie River winding through it. The railroad here runs north-westward.... Though 7,123 feet above the sea, or nearly a thousand feet higher than Mt. Washington, I am now sitting writing, at 9 P. M., with windows and doors open, with ordinary summer garments on, and feel so chilly sensation. I am told that cattle pasture here nearly all winter. Dr. H. Latham, Surgeon of the Union Pacific Railroad hospital (located here for the salubrity of the climate), has an excellent garden plot of an acre or so, on ground broken up only last spring, and immediately planted. I noticed very fine peas, of good size, large potatoes, squashes, etc. Dr. L. is making observations upon the climate and productions, and will doubtless be happy to furnish any information desired. Quite a number of gentlemen, some of them from Europe, are making this a centre of their summer hunting grounds, as antelope and other large game abound in this region...."

[Other notes from Mr. Judd upon prairie farming, etc., must necessarily be deferred for want of space.]

Why Damp Grain Weighs Less than Dry Grain.—This was one of the things that puzzled us when a boy. "This wheat is damp and will weigh heavy" we once said to our father. "You ought to know better than that," he replied; "damp wheat never weighs as much as dry wheat." We could not understand how this could be the case and were afforded no explanation. We fear this is rather a common fault with fathers. The truth of the matter is this. Take two acres of wheat, each of which will yield precisely the same amount. Let one be harvested and thrashed in perfect condition and the other in a wet state. The latter, if thrashed out clean, will weigh more than the former by exactly the amount of water it contains over and above the other. But the former will weigh more per bushel. The water absorbed swells the wheat and we get a greater bulk, but it is lighter in proportion to bulk than the dry wheat. This is all there is to it.

Cure for Dogs Eating Eggs.—S. M. Allen writes: "Some years ago I had a favorite spaniel, that became very troublesome on account of eating eggs; he was cured entirely by breaking a small hole in the end of an egg and putting Cayenne pepper in it and giving it to him. The next egg was then wet and rolled in the pepper. He tasted the broken egg, but left it at once and ran to the nest, smelling the nest-egg very cautiously, but did not touch it; and I never could persuade him to touch one afterward."

Minks.—We are called upon for information in regard to mink-breeding, putting up minkeries, requisites, where stock may be obtained, etc., and would be glad to publish an accurate statement about this matter.

Drainage.—There's Nothing Like Knowing How.—Col. Waring (see his article on page 374) has found that by employing men who know exactly how to do it, he can cheapen the cost of digging and tile-laying about half. This ought to stir up thousands of men to learn how to do drainage. They will have employment enough, at good wages. The rainy season at the West will set the farmers at getting rid of their surplus water, and at the East millions of dollars are ready for investment in tile drains, if the cost can be reduced to anything like what the Colonel's figures would indicate.

Soiling Cattle at the West.—"Plain Plodder," Carthage, Ind., writes: "To us here in the West, where land is cheap and labor scarce and high, so much talk about soiling sounds away off."—No doubt. And we have never recommended soiling in such circumstances. But our esteemed correspondent should remember that the *American Agriculturist*, while it has tens of thousands of subscribers on the broad prairies and rich bottom lands of the West, has also thousands of readers in sections where we have to use the utmost ingenuity to make manure and enrich our land, and where, soiling in whole or in part is very useful in enabling us to keep more stock on a few acres. There are places at the West, too, where soiling can be practiced to advantage, at least in part. And in the neighborhood of large cities everywhere soiling is generally profitable. Even on large farms where land is cheap, a piece of corn fodder would often prove of great value in seasons of drought. In fact at the West as at the East, dairying to be as profitable as it is capable of being, requires a partial adoption of the soiling system.

Early Rose Potato.—It is seldom that a comparatively new thing gives such general satisfaction as has the Early Rose. We have before us a large pile of letters, from all parts of the country, written by those who had received them as Premiums, or had purchased them. We cannot publish these letters, they are so numerous; and the variety is now so generally distributed, that it is not necessary. Mr. M. Heaton, Fulton County, Ill., raised 8 lbs 10 oz. from a single eye, and E. C. Long, Erie County, N. Y., 118 lbs from 1 lb. We have heard of but one instance of rotting, and that was at Aurora, N. Y., where all varieties rotted.

Winter Barley.—O. Edwards, Kansas. We have had but little experience with winter barley. When the mild made its appearance in the western part of N. Y. State, and destroyed our wheat, farmers turned their attention to the cultivation of winter barley, instead of wheat. Large breadths were frequently grown. Sometimes as high as 75 bushels per acre was obtained. The land was prepared and sown precisely as it would be for wheat. When we found, however, that the Mediterranean and other early varieties of wheat, when sown on good, dry, well-prepared land, generally escaped the mildew, the farmers gradually took heart and returned to

the cultivation of winter wheat; and now scarcely any winter barley is raised. Spring barley is more profitable. It is not so plump or handsome a berry as winter barley, but it brings a higher price for malting purposes. For feeding purposes the winter barley is much the better, and the same is true of two-rowed spring barley as compared with the six-rowed kind, although the latter brings a higher price in the Eastern markets for malting.

Blackberries.—The Kittatinny stands at the head of the list this year. We have favorable reports from various quarters, East and West.

Rotting out Stumps by Chemical Means.—"J. H. C. S.," of Carville, Wis., has to contend with many stumps on a newly cleared farm. They are chiefly black oak, and it costs 50 to 75 cents apiece to dig them out. He asks if we know of any chemical means of rotting them. Oil of Vitriol poured into one or more cavities bored with an auger has been said to effect this result. We can not contradict the statement, and have some evidence to indicate its beneficial effect. Any one who knows will favor us by giving accurate information.

Another Lawn Plant.—We some time ago mentioned the use in France of the common Yarrow, as a lawn plant. Now they speak highly of a Pyrethrum (*P. Tchihatchewii*), a plant belonging to the same family, which is said to be adapted to soils so poor that they will not raise grass. It is claimed that the plant is dwarf and hardy, and bears cutting well.

Sassafras.—"J. A. R.," of Battle Creek, Mich., says Sassafras may be entirely eradicated from the land by pasturing with sheep, as they are very fond of the young shoots and will keep the plants trimmed down so close that they cannot live.

New York State Fair.

INAUGURATION OF A NEW PRINCIPLE.

The New York State Fair was held at Elmira, beginning on the 14th of September, and we are unexpectedly able to give our readers, in brief, the results of the first two days. The inauguration of a new principle in holding fairs in this country was attempted, and the fair was looked forward to with no little solicitude. Few who have not experienced it can conceive the perplexities which surround and harass the managers of a great fair and cattle show. Some of these trials are unavoidable; many have been swept away this year by adhering rigidly to the rule that every thing must be entered on the Secretary's books three weeks before the show.

This order was not known by all, and they were allowed to exhibit their goods subject to such commendatory notices as the judges saw fit to give, but to take no prizes for articles not regularly entered. The result of this rule is that the Secretary was able to prepare a full printed catalogue of all entries, systematized and numbered, furnishing a catalogue of very great service to any one who wished to examine critically the stock and articles exhibited. In this catalogue the name and address of the exhibitor are given in full, and in many cases a description of the article, its mode of working, uses, etc. To the mere lounging strollers, who constitute three-quarters of the visitors, the catalogue is of no service; to others it is of incalculable advantage. To the numerous reporters it saves much time, and enables them to be more accurate in their statements than ever before. The advantage to exhibitors is immense. Another great advantage of making early entries is that the Superintendent can provide proper buildings and shelter for every thing entered. Thus, after the entries were in, it was found that more sheds for cattle were wanted, and these were at once put up. When the opening day came, the judges were promptly present, having been notified that their expenses would be paid if they reported themselves at 9 o'clock. The catalogues, bound and interleaved with note paper, served as committee books, and the judges went at once to work. The awards were made that day, and the prize cards and ribbons were attached the next morning, which was the first public day. Thus from the outset the public were instructed in the relative qualities of the stock and articles.

In making entries so long before the show, there will, of course, always be some animals and articles which cannot be shown, as accidents happen and disappointments occur; but after putting the Society to the no slight expense of preparing stalls or space for the animals or articles entered, it should be a point of honor not to allow a trifling thing to interfere with the presentation of the articles. It was unfortunate that the list of entries was allowed to be published in an agricultural paper

some two weeks before the show, for this doubtless influenced some persons not to exhibit in the face of so strong competition. To many this motive was freely, and, we doubt not, falsely imputed by exhibitors who were present.

In point of quality and instructiveness this exhibition surpasses, in our opinion, any heretofore held. Everybody could find and see the things there which he was interested in. The amount of table room and stall room not occupied, gave the people a good chance to sit and rest, though it did not add to the attractiveness of the show. The Short-horns were in fair numbers and of superior beauty and excellence. Devos were also numerous and good. We cannot bear much white on a Devon, and prizes were awarded to some which had enough to condemn them utterly, though doubtless of pure blood. The show of Ayrshires probably could not be surpassed in this country, the finest unquestionably belonging to the President of the Society. The Jerseys were represented by some excellent specimens, but the stalls erected for Mr. W. B. Dinsmore's stock stood empty, and this gave the gentlemanly and voracious person in whose name a good deal of Jersey stock was entered the opportunity to insinuate, that Mr. D., having seen by the published list of entries that he was to be there, had decided not to come. We hope no honest exhibitor will ever suffer from like imputations again, however unfounded they may be. Among the working oxen and fat cattle were some of the largest and finest we ever saw, including one pair of working oxen, not fat, weighing 4,796 pounds, and one fat ox said to weigh 3,433 pounds. There was a good show of horses, but we think it unfortunate that the thoroughbreds were not allowed a class by themselves, as other kinds of horses compete with them at great disadvantage, to say the least. The show of long-wool sheep was of great interest, Cotswolds, Leicester, and Lincoln, being well represented. The fine-wool sheep, represented by American and Silesian Merinos, attracted less attention than during the heavy fleece mania and "gas-tar" excitement, but the real fine-wool-bearing sheep were out in full force, and modest Karl Heine, of Red Hook, had never a better right to be proud of his Silesians, a number of which have been recently imported. We were proud when we came to the beautiful plump Essex swine of our associate, Joseph Harris. They were far from fat, but plump, round, low, fine-boned, sleek, healthy, solid, and good-natured; and the young ones showing wonderful size for their weeks. The so-called "Cheshires" were monsters, but beaten for size by the Yorkshires, an apparently healthier, harder, but somewhat coarser race, having all the characteristics of a fixed breed, which neither the "Cheshires" nor the Chester Co. Whites can claim in an equal degree. The poultry show was large and good; the variety far larger than the premium list called for. The show of power, horse, and hand implements, of manufactures, grains, roots, fruits, and flowers, was, on the whole, inferior to most former shows of the Society, in point of number of articles, but it has been rarely excelled in the real practical value of the show. We have no space nor will, now, for unfavorable criticism of the management, though there might be found cause, and we shall hear grumbling enough. Success should be measured by the instruction afforded by the show, and the encouragement it gives to the exhibitors of the most useful and meritorious articles.

Lawns.—"H. McL.," Hobart, N. Y. Red-top makes the finest lawn—June or Kentucky blue grass the most enduring. Mixtures of grasses are preferred by many. One popular about N. Y. is 12 quarts R. I. Bent, 4 Creeping Bent, 10 Red-top, 3 Sweet-scented Vernal, 2 Kentucky Blue, 4 White Clover. From 2 to 5 bushels to the acre are sown.

Kansas and the Crops.—The quotation of a sentence from a half-drowned-on Kansas correspondent of the Country Gentleman has brought us several letters of remonstrance. Among them one from J. P. Brown gives the following general statement of the results of the unusually wet season: "This has been a glorious year for our State. The best fruit I ever ate in my life we have raised this year. The best crop of oats, and safely harvested, too, has been grown here this year. An excellent crop of wheat has given us encouragement to sow again, while corn will be as good as any farmer could desire. We have had hard, long rains, that have done considerable damage to some portions of the country, and more damage to the railroad companies, which are rebuilding the bridges washed away; but with few exceptions, the rains have been very beneficial to the crops. There are two classes of land in Kansas: one the low bottom lands, that on such occasions as the late rainy weather are badly damaged by overflow; the other, and by far the larger and better, is the vast, rich, fertile, rolling prairies, that, rain or shine, produce good crops."



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"Men are traveling through the country selling recipes at a high price to teach how to dress skins. I propose in this work to teach all these things, so that a man may have them in a neat little volume for reference at any time. I shall also treat upon angling for the trout, the bass, and the pickerel, which I think I understand. I hope to make it all so plain that even the inexperienced will, in some measure, succeed."

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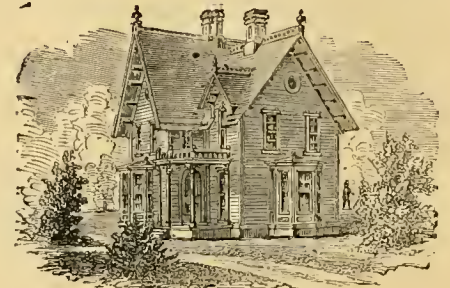
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For Price List address
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All the desirable varieties of Blackberry, Raspberry, and Strawberry Plants, including the Kentucky—that valuable addition for market gardening. Also all the new varieties of Potatoes, the most desirable of which are the Early Rose and Bresee's Prolifer. Don't forget to send for Price List before purchasing elsewhere, whether in large or small quantities.

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ORANGE QUINCE, 1 1/2 to 2 1/2 feet, v. thrifty.....	per 12.	100.	1,000.
CURRENTS, La Versailles, W. Grape, Cherry, 2,000	7.50	60.00	
Red & White Dutch, Houghton's Seed.....	1.00	4.50	30.00
Gooseberry.....	1.00	4.00	30.00
RASPBERRIES, Mam. Cluster, large stock.....	1.00	2.50	15.00
Doodittle \$6 per 1,000; Seneca, Thornless.....	1.00	2.50	15.00
FRANCOSA, Philadelphia, and other Antw'ps.....	1.00	3.50	25.00
BLACKBERRIES, Kittatiny, W. Early, Missouri Mammoth.....	1.00	3.50	15.00
STRAWBERRIES, Michigan Seed, Kramer.....	1.00	5.00	
Peak's Emperor, Collins, Nap. Ill. Nienise.....	1.00	3.00	
Chas. Downing, Nicauor, Perpetual Fine.....	50	1.50	7.50
Wilson's Albany, and other sorts.....	1.75	2.50	

At the "12" and "100" rates, we will mail the above to any P. O. in the U. S. Address

C. L. VAN DUSEN, Macedon, N. Y.

NO! I do not require you to send stamp for my price list of Plants and Potatoes, but I would not object if you did.

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Our Price List of Grape Vines for autumn of 1869, also Club rates, can be had on application. Our collection includes all the best native varieties, warranted true to name. Quality and prices cannot fail to suit.

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Hyacinths, double or single, fine named varieties.....	\$3.50
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Tulips, early double, fine named varieties.....	1.50
Tulips, early double, fine mixed unnamed.....	75
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Tulips, early single, fine mixed unnamed.....	75
Tulips, Parrot, fine mixed, unnamed.....	1.00
Tulips, Bybloemen, bizarres and rose, fine named.....	3.00
Tulips, Bybloemen, fine mixed.....	1.00
Tulips, various sorts mixed, unnamed.....	75
Crocus, mixed, blue, white, yellow, and striped.....	25
Crocus, finest named varieties.....	40
Polyanthus Narcissus, finest named varieties.....	2.50
Polyanthus Narcissus, fine mixed unnamed.....	1.50
Iris, English, fine mixed varieties.....	1.00
Iris, Spanish, fine mixed varieties.....	75
Ranunculus, fine mixed varieties.....	50
Anemones, fine mixed varieties.....	50
Gladiolus, hardy fine mixed varieties.....	1.00
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Snowdrops, single.....	30
Hyacinths, the mixed varieties.....	75
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Lilium auratum, or new Golden Banded Japan Lily, each.....	1.00
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Collections containing a fine assortment of all the leading varieties of the above will also be mailed post-paid, as follows: Collection No. 1, \$30; No. 2, \$10; No. 3, \$5.00; No. 4, \$3.00. For the contents of each collection and further particulars, see Catalogue.

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AUTUMN, 1869.

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The President Wilder Strawberry.

Besides the variety raised by the distinguished horticulturist whose name it bears, there is also a European sort called President Wilder, of which nothing is known in this country. As several unscrupulous persons are advertising the latter in a manner calculated to mislead the public, we warn all who desire to obtain the best of all strawberries, to be careful of whom they purchase, and be sure to get the

American President Wilder,

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Planters and Farmers of the South, and of the whole country over, will find it most decidedly for their interests to procure their seed directly from the grower, and thus avoid the great loss and aggravation caused by planting old and impure seed. I have over one hundred choice varieties growing on my four seed farms, which I warrant to be both pure and true, and to reach each purchaser.

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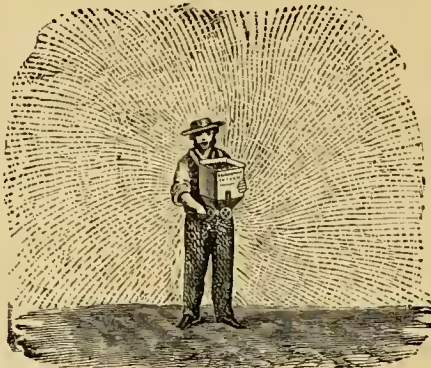
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The price of the Hand Sowers is \$10.00, and of Power Sowers, \$50.00. Send for Circulars.

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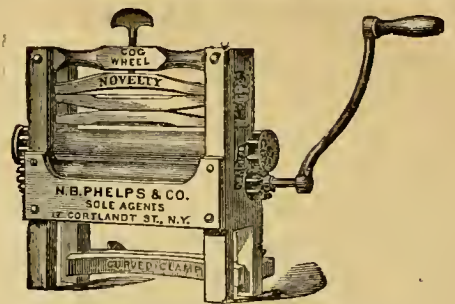
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References: DUNCAN, SHERMAN & CO.; HOYT, SPANGES & CO.

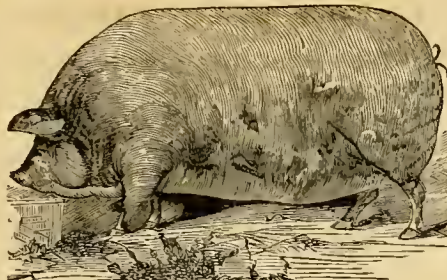
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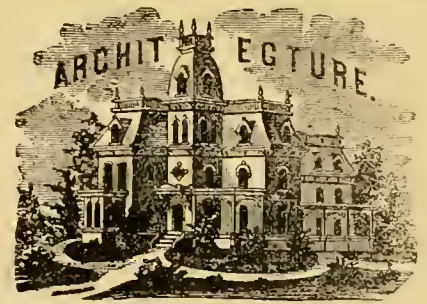
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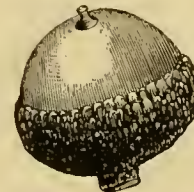
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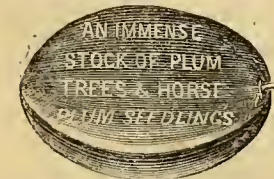
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NORTH EAST, Pa., Aug. 5th, 1869.

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NOTICES BY THE PRESS.

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Entered according to Act of Congress in October, 1869, by ORANGE JUDD & Co., in the Clerk's Office of the District Court of the United States for the Southern District of New-York.

VOLUME XXVIII.—No. 11.

NEW YORK, NOVEMBER, 1869.

NEW SERIES—No. 274.



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TOWING SALT HAY.—DRAWN BY GRANVILLE PERKINS.—Engraved for the American Agriculturist.

The salt marshes along the Atlantic coast are covered by a vegetation peculiar to such localities. In some places the growth consists almost exclusively of Cat-tails (*Typha*) and coarse, reedy grasses, while in others it presents the appearance of a fine level meadow. The grass will be found on examination to be very harsh and wiry, and more or less mixed with fine rushes and other grass-like plants, and affords an abundance of hay, which, though not good food for animals, is still of considerable value. Those who have farms within a few miles of the coast generally own a tract of this marsh land, which is bought and sold as a part

of the farm. The mowing is done by hand, and the hay, when dry, is made into cocks, and left until it can be removed. When the marsh is so located that loaded wagons can go upon it after the ground is frozen, the hay is hauled off in winter. In other places the salt meadows are accessible only by boats, and in this case the hay is brought away by water. Our artist, who was down in the marshes of Ocean Co., N. J., last season, has given us a sketch of this manner of taking home the hay. Large scows are freighted with enormous loads, and these are towed by means of sail-boats. The neighbors help one another in this matter, and there will

often be five or six or even a dozen in a line. Salt hay, by its elasticity, is particularly adapted to the covering of such crops as require winter protection, and is largely used as a mulch for small fruits and those vegetables that are left in the ground over winter. Large quantities are used in packing glass, etc. The chief consumption is in bedding for horses and cattle, and after being used thus, it finds its way to the manure heap. Though slow to decay when exposed to the weather, it decomposes rapidly in contact with fermenting manure, and adds a large amount of vegetable matter to the compost, while it does not introduce any troublesome weeds.

A "Baker's Dozen."

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Calendar for November.

Day of Month.	Day of Week.	Boston, N. York State, Michigan, Wisconsin, Iowa, and Oregon.			N. Y. City, Ct., Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois.			Washington, Maryland, Virginia, Kentucky, Missouri, and California.		
		Sun rises.	Sun sets.	Morn rises.	Sun rises.	Sun sets.	Morn rises.	Sun rises.	Sun sets.	Morn rises.
1	M	6 39	4 54	3 21	6 30	4 57	3 21	6 27	5 0	3 22
2	T	6 34	4 53	4 35	6 31	4 56	4 35	6 28	4 59	4 34
3	W	6 29	4 51	5 50	6 32	4 54	5 49	6 29	4 58	5 49
4	T	6 27	4 50	sets	6 34	4 53	sets	6 31	4 57	sets
5	F	6 23	4 49	6 31	6 35	4 52	6 35	6 32	4 56	6 40
6	S	6 20	4 48	7 19	6 36	4 51	7 23	6 33	4 55	7 38
7	S	6 14	4 47	8 13	6 37	4 50	8 13	6 34	4 54	8 23
8	M	6 42	4 47	9 7	6 38	4 49	9 12	6 35	4 53	9 17
9	T	6 45	4 44	10 9	6 40	4 48	10 13	6 36	4 52	10 18
10	W	6 41	4 43	11 9	6 41	4 47	11 13	6 37	4 51	11 16
11	T	6 40	4 42	morn	6 42	4 46	morn	6 38	4 50	morn
12	F	6 47	4 41	9	6 43	4 45	12	6 39	4 49	15
13	S	6 45	4 40	1 8	6 44	4 44	1 10	6 40	4 48	1 12
14	S	6 40	4 39	2 6	6 46	4 43	2 7	6 41	4 47	2 8
15	M	6 51	4 39	3 9	6 47	4 42	3 9	6 43	4 47	3 9
16	T	6 52	4 38	4 0	6 48	4 41	3 59	6 44	4 46	3 58
17	W	6 52	4 37	4 58	6 49	4 40	4 57	6 45	4 45	4 55
18	T	6 51	4 36	5 57	6 50	4 39	5 55	6 46	4 44	5 52
19	F	6 56	4 35	rises	6 51	4 39	rises	6 47	4 44	rises
20	S	6 57	4 34	5 55	6 53	4 38	6 0	6 48	4 43	6 4
21	S	6 58	4 31	6 32	6 54	4 38	6 36	6 49	4 43	6 41
22	M	6 59	4 33	7 31	6 55	4 37	7 39	6 50	4 42	7 44
23	T	7 0	4 32	8 30	6 56	4 36	8 31	6 51	4 42	8 40
24	W	7 2	4 32	9 37	6 57	4 36	9 41	6 52	4 41	9 45
25	T	7 3	4 31	10 44	6 58	4 35	10 47	6 53	4 40	10 50
26	F	7 4	4 31	11 52	6 59	4 35	11 54	6 54	4 40	11 56
27	S	7 5	4 30	morn	7 0	4 35	morn	6 55	4 40	morn
28	S	7 4	4 29	1 3	7 2	4 34	1 4	6 56	4 40	1 5
29	M	7 7	4 29	2 15	7 3	4 34	2 15	6 57	4 39	2 16
30	T	7 6	4 29	3 27	7 4	4 34	3 25	6 59	4 39	3 24

PHASES OF THE MOON.

MOON.	BOSTON, N. YORK.		WASH'N.		D. EVE.	MOR.	EVE.
	D.	H. M.	D.	H. M.			
New.....	3	6 51 ev.	6	6 89 ev.	7	7 12	7 12
1st Quart.....	10	10 11 m.	9	9 59 m.	13	7 24	6 14
Full.....	19	2 34 m.	2	2 22 m.	19	7 34	5 46
3d Quart.....	26	4 30 ev.	1	1 18 ev.	25	7 41	5 20

AMERICAN AGRICULTURIST.

NOVEMBER, 1869.

While the farmer is garnering the last of the products of the soil, and is making preparation for a season of comparative rest from severe labor and pressing cares, all nature is preparing for its long winter's nap. The protection of the dead plants and forest leaves keeps life in many a delicate root. The buds of the forest trees are encased in many a fold of downy wrappers. Insects lay their eggs, which are to be hatched by the spring sun, and then die; or they enclose themselves in mummy cases, and hidden away in nooks and corners under the leaves or the soil, they wait for the touch of spring. Squirrels lay away their stores of nuts and grain, and other animals lay on stores of fat, upon which to draw for warmth and sustenance during the cold weather. It is natural for any kind of stock to go into winter quarters fat. If we take the hint, we shall learn that, as a rule, animals are most easily fattened in the autumn, and that if we would winter our stock easily, we must get them in prime order at the season of the year.

We rejoice in abundant harvests, and in good prices for most kinds of farm produce. Fall gardeners and sleek cattle should suggest our obligations to the All-giver, and prompt us to share His bounty with those less favored. Thanksgiving Day is a sort of Harvest Home festival, in its commemoration of the harvest. Let us heartily enjoy it, with all its happy memories and pleasant associations.

Hints About Work.

Buildings.—Every thing ought to be put in order for cold weather. Earth may be banked up against the foundations of cellars. Stables may be boarded up on the inside, and the space filled with straw or leaves. Tighten the weather-boarding where it is loose. Set glass where panes are broken, and look to leaks around chimneys, holes in the roof, etc.

Bees should be withdrawn from the pastures, and put in their regular winter quarters. They will bear pushing now to the utmost.

Cows.—Feed succulent, milk-producing food, and be sure that the milkers do not dry off the cows to save themselves the trouble of milking. Keep the stables very clean, and feed liberally if there are fears of their slinking their calves, and until snow

covers the ground give them some pasturage. After this give them a clod of earth occasionally to mumble. Add a handful of bone meal to their daily feed, of which rye bran, or wheat bran should form a part; feed pumpkins without seeds while they last.

Young Cattle.—Keep them in open yards with plenty to eat, and with deep, warm sheds, in which they will be secure from the effects of storms.

Sheep.—We provide for April lambs this month, and both rams and ewes should be in good condition. Feed roots cut up, oil-meal, or grain-meal of some kind, and give the rams oats, in addition. Those who feed sheep usually calculate to have the grain which they consume add simply its own value to the sheep, while all the profit they look for and the pay for care and labor is in the manure which they make; to this end the yards and sheds are constructed, an abundant supply of litter is provided, and everything tends to make the manure pile grow. In a less degree, the same is true of other fattening stock, the manure from which is always the richest.

Horses.—If possible, have the stable so arranged as to be more easily kept clean than neglected. Young horses ought to be stabled, and as carefully groomed as older ones. The horse's future is in a great measure decided by his first winter. Nothing will compensate for neglect. Old horses, especially those which have been hardworked, may have the range of a piece of woodland or brush pasture until snow comes, and will do well, if the grass and bushes have not been gnawed down too close by sheep and other horses. Horses do well, at least early in the season, on corn stalks, and will often eat them cleaner than cows. If cut too short, they will give the horses sore mouths.

Swine.—Fatten upon boiled potatoes and meal, or boiled corn, or in some way cook all the feed of fattening swine. Breeding sows that have got their full growth need not be fed much grain.

Grain of all kinds should not be left in the sheaf or stook, but corn should be husked and wheat thrashed and stored in rat-proof granaries as soon as possible. Market at fair prices rather than hold.

Corn.—It is time now to have all the corn husked and stored in airy cribs. Stack the stalks near the barns, or better, store in the barn or under cover, if there is room, as they retain flavor longer.

Cabbages, if not marketable at remunerative prices, make excellent milk-producing fodder. Put them in the barn cellar or in trenches for winter use. All decayed leaves must be stripped off and given to the hogs, or the milk will taste.

Roots.—Before storing, expose them in small heaps for several days, to "sweat" off their superabundant moisture. Top them without cutting the flesh, and store them clean as possible.

Potatoes in pits in the open ground must have free ventilation at first, which should be reduced as the weather grows colder, and just before the ground freezes up solid, the heaps must have their last coat of earth, and not before.

Fall Plowing.—Do as much plowing as possible, particularly of land likely to lie long wet in the spring. If plowed it will be fit to work earlier.

Manure.—Be sure to lay in plenty of muck, swamp grass, leaves, and other litter, to work into the manure during the winter. Spread or turn the heaps, to prevent heating, or keep hogs upon the manure. Manure in cellars ferments nearly as readily in winter as in summer; hence it is necessary either to tread it, so that air shall have little access, or to work it over frequently, (both of which operations are imperfectly done by hogs), or to mix it with large quantities of soil or of inert vegetable matter. The last alternative is probably most desirable, the more so as it does not interfere with the improvement of the mass by the other processes. Leaves from the forest, gathered and stored dry, dry muck, swamp hay, straw, etc.,—one or all are easily procurable on most farms, even as late as this, and the value of the manure made may be increased in proportion to the enlarged bulk.

Draining may be pushed on so long as the ground

is open, and even later, provided there is sufficient force to open and fill the ditches the same day, in which case the line of the drains may be kept from freezing by laying on a thick covering of any litter.

Surface Drains.—Make surface drains wherever water needs to be carried off, or where it has a natural flow during heavy rains or thaws. Protect spots liable to wash by stones, brush, or other partial obstructions to the very rapid flow of water.

The Water Supply for cattle is a serious consideration. Much manure is lost by driving cattle to water. Cisterns, if low, should be cleaned out and put in order, to be filled with pure water before snow comes. If the supply be drawn from springs or flowing wells by pipes, look to the condition of the fountain, and clean it out after the leaves fall.

Fences.—Poor fences make bad neighbors. They tempt cattle to trespass, especially when the grain fields look green and inviting, and they tempt folks to steal fire-wood, for which sin the careless farmer is in part answerable.

Butter may be made in winter as well as in June, but it will not be quite so good. The milk must be kept where it will not freeze, and where it will not absorb smoky or other flavors from the kitchen.

Fowls for market ought to be fat. It is poor policy to simply throw down a little extra corn for a few weeks before the birds are to be killed, and finally give them one big feed of corn, and then cut their heads off, pluck and slip them. Such fowls will bring about half the price they would have brought had they been sht up and fed the same weight of Indian meal, kept well supplied with pure water, had the floor of their coop strewed with well-dried earth daily, and cleaned out once a week, and finally fasted eight to twelve hours before they were killed. Birds thus sht together must not quarrel; they should be fed on a variety of food three or four times a day, the last feeding being of hard grain. Feed no musty or damaged wheat, though screenings, consisting of shrunken and broken grains, with foreign seeds, need not be avoided. In packing for market, kill with a small knife. Pluck dry while warm. Dip in hot water to plump them, and pack snugly in tight boxes when cold.

Work in the Horticultural Departments.

This month should see everything well into winter quarters. Not that the year's work is closed by any means, for the work of the orchardist and gardener is of that ever-beginning, never-ending kind, that there is always something which may be advantageously done, even in winter, if the weather will allow of out-of-door operations.

Orchard and Nursery.

Fruit.—Keep at an uniform and low temperature. Do not close the fruit cellar until the cold without makes it necessary, to prevent freezing. Where there is much fruit, the changes which accompany ripening generate an appreciable amount of heat, and the cellar or fruit room will require opening frequently. The cooler the fruit can be kept, the more will its ripening be retarded. By proper management pears, which, in a warm room, would come into eating in Dec., may be kept until Feb.

Cider.—Good cider requires good apples. It is much better to assort carefully, and work up all poor fruit by itself for vinegar. If the pulp is allowed to remain a few days before pressing, the cider will have a higher color and finer flavor. Use new or thoroughly clean barrels, and observe the greatest cleanliness in every step of the process.

Planting.—Do not be tempted to set out trees in partly frozen soil, or where the ground is charged with moisture. It is much better, at least at the North, to heel in the trees. A dry, sandy place should be chosen for the purpose, and care be taken to fill in thoroughly around the roots.

Cions may be cut at any time unless the twigs are frozen. Those wanted for use during the winter for root grafting are best packed in boxes of sawdust, slightly damp, as it comes from the mill,

and kept in the cellar. Those to be kept until spring may be buried out of doors below the reach of frost, in a well-drained place.

Stocks for root grafting.—Take up and assort into bundles, and pack with sawdust in a cool cellar.

Seed-beds, even those containing the hardiest plants, will need some kind of protection. There is no better covering than leaves, which should not be put on until the ground begins to freeze.

Fruit Garden.

In many places the work suggested for last month can be done now.

Covering Raspberries.—The tender raspberries need protection, and even those reputed hardy come out all the better in spring if they have been covered. The canes are laid down and covered with a few inches of earth. Do this as nearly as possible at the time the ground is about to freeze.

Root Cuttings of blackberries and raspberries may be made and buried for the winter. See page 418.

Cuttings of quinces, currants, and gooseberries, may still be planted if the ground is in good condition. Make them about six inches long, and plant with one bud at the surface. The quickest way is to open a trench and lay the cuttings with the end of a board; finish filling the trench, and tread down firmly. It is well to mulch the bed, to keep the cuttings from being thrown out by frost.

Grapes.—Pruning is usually done this month. There are now only canes and buds. Each of these buds will next year be a green shoot, and may or may not bear fruit. Bearing this in mind, one must exercise judgment, and leave enough buds to produce new shoots, to properly cover the trellis. This is the best instruction we can give those who follow no particular system in pruning, or who have old vines that have been neglected and are beyond proper control. In cold climates it is better to leave an extra bud at pruning, and remove this in February or after the severity of the winter is over.

Grape Cuttings are made at the time of pruning. Cut the wood into lengths of two or three eyes, tie in convenient bundles, and bury it where it will be free from frost. If it will be needed for starting under glass, cut into convenient lengths and keep in the cellar under sand or earth.

Kitchen Garden.

Asparagus.—If the beds are not already covered, put on coarse manure or litter.

Rhubarb.—Transplant if new beds are needed and the ground is open, rather than wait until spring. Cut up old roots so as to have an eye or bud to each piece, and put out in rich soil.

Roots.—Sufficient is said upon storing them on page 414. Parsnips, salsify, and horse-radish, being perfectly hardy, a portion of the crop is usually left in the ground until spring.

Cold-frames.—The plants in these are more apt to be injured by too much heat than by too great cold. The object is to keep them perfectly dormant and safe from injury by alternations of freezing and thawing. During this month the sashes are usually required over the plants at night only.

Celery.—Store for the winter in trenches a foot wide, and of a depth equal to the height of the plant. The roots are set in closely without any earth packing. When cold enough to injure the tops, cover with straw.

Cabbages.—Select a place from which water will drain off. Plow away a couple of furrows, set the cabbages on the ground, heads down and roots up, then throw the earth towards them with the plow, and finish off with the spade. The earth should be from four to six inches thick over the heads. Cabbages should not be buried in this way before cool weather comes on, and there is a prospect that the ground will soon freeze.

Spinach and Sprouts.—Where the winters are severe, these will need a covering of straw or salt-hay,

but not enough to smother them and cause decay.

Clear Up.—Dispose of all sorts of rubbish, and do every job that will save an hour's work in spring.

Manure.—This is the key to success in the garden, and every leak and waste of fertilizing material should be stopped. A home-made earth closet, such as is described on page 414, will save a valuable and generally wasted manure. Have the hen-houses so arranged that there shall be no loss here.

Soil.—Spade or plow up stiff soils, and leave them rough or in ridges, that they may be well exposed to the action of the elements. Prepare a supply of soil to be used in hot-beds, and place it under a shed or in a heap covered with boards or sods. A light loam, with one-third fine manure, is best. If the soil is disposed to be stiff, add sand.

Flower Garden and Lawn.

Gather up all stakes not needed, movable trellises, and garden furniture of all kinds, and put under cover. Remove all rubbish, and have everything in neat order.

Planting of deciduous trees and shrubs may be done whenever the ground is in suitable condition.

Bulbs.—Plant before the ground freezes. It would have been better to have done it earlier. See last month, page 377. If gladioluses have not been taken up, do it before the ground freezes. Japan lilies and others are quite hardy, but if desired, they may be moved now. Bulbs of all sorts will flower all the better in spring if covered during winter with coarse manure.

Chrysanthemums will need care, or they will break down under heavy rains. When those which have bloomed in pots are out of flower, they should be cut back and placed in the cellar.

Roses.—In dry soil the tender kinds may be kept through the winter by laying them down and covering with earth, over which sods are placed.

Protection to half-hardy shrubs is best given by means of cedar or other evergreen boughs. See article on protecting trees on page 419. Swedish and other spiry Junipers should have a cord run around them, to keep them from being bent out of shape by a weight of snow.

Plants in Pits and Cellars need to be kept as cool as may be. Avoid dampness, and keep as dry as possible, without injury to the roots. See that mice do not injure them.

Green-house and Window Plants.

Give air whenever the temperature will allow, and in green-houses use fire heat only when absolutely necessary. Plants that are only to be kept from frost, without regard to bloom, may have the house as cool as 40°, or 35°, but flowering plants require a temperature of 60°.

Bulbs.—Bring those potted early into a warm place, provided the pots are well filled with roots.

Camelias.—Spray frequently. If the red-spider attacks them, remove the infested ones, and use redoubled care in showering.

Climbers.—Tropaeolums, Lophospermums, Mandarinas, and other soft-wooded climbers, grow rapidly from cuttings, and may be made useful in decorating the green-house.

Hanging Baskets.—Those in dwellings are apt to suffer for want of proper watering. If the basket is of wire or other open work, the best way to water it is to set it in a pail or tub of water until the earth is thoroughly soaked through.

Ivy has its appearance, as well as its health, much improved by an occasional washing of the leaves.

Annuals.—Where there is room a stock of annuals should be sown. Sweet Alyssum, Candytuft, and Mignonette, are always useful to add to bouquets; and Lobelias, Nemophilas, etc., soon make fine specimens if well grown.

Fumigate.—The green-house should be well smoked with tobacco once or twice a week, to keep the green-fly in check. It is best done at night. Window plants should be placed in a box or under a barrel and smoked if this insect molests them.

AMERICAN AGRICULTURIST.

ORANGE JUDD & Co., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies; Four to nine copies, \$1.25 each; Ten to nineteen copies, \$1.20 each; Twenty copies and upwards, \$1 each. Papers are addressed to each name.

"YOU HIT ME."

'Large Pay for Little Work.'

"Why, that's just what I have been looking after, these many years, and having been disappointed everywhere else, I am going to try you."

So says a Reader of the *American Agriculturist*, after seeing the Publishers' announcement last month, inviting everybody to try for a Premium this fall; and that's about what a great many others may well say. We do offer "large pay for little work," and we want not less than **25,000** people to do this little work and get the large pay.

And here's the way to do it:

Just take a copy of the *Agriculturist* and show it to the first friend or neighbor you meet. Show him the many beautiful and instructive *Engravings* it contains, and tell him there are to be over **\$13,000** worth of these engravings between now and the close of next year.—Tell him there will be more than a Thousand Columns of the most carefully prepared reading matter, containing many thousands of useful hints, suggestions, and directions about crops, the most profitable way of raising and selling them, etc., and about many other topics, useful not only to cultivators, but to everybody else. Tell him that these pages are not prepared by mere fine writers, but by experienced men who live and work on farms at various points, all the way from the Atlantic to the Rocky Mountains—men who have their eyes and ears wide open, watching for every hint that may be useful to themselves and our readers.—Tell him it is impossible for him to read what these men tell without getting some hints that will add many dollars to the profit of his own labor.—Show the Household and Children's Department, and tell him how much of the interesting and useful these columns contain.—Talk to him just as you would if you had some good thing you

wished to sell him very cheaply, on his account quite as much as your own,—which you can truthfully do.—If he thinks he cannot afford to subscribe, show him that it is less than half a cent a day!—Show him that the most successful men are almost always those who *read* most and *think* most—who work *with their minds as well as with their hands*.—Tell him the most happy men at work are those who read about their business, and have something to occupy their minds. Let him know of the faithful exposures of humbugs in the *Agriculturist*. If he is not convinced at the first talk, try him again at another time. The result will be, he will conclude to try the Paper for a year if you will take his subscription and forward it. It may take a little time and patience at first, but if you persevere, your powers of persuasion will rapidly increase, and in a little time you will be able to convince any one of the *truth*, that it will *pay* him to subscribe. In this way you will be able to secure five, ten, twenty, fifty, a hundred—perhaps several hundred subscribers, *with very little work or time*. We have canvassers who have secured five to seven hundred names in a single month. Human nature and human wants are about the same everywhere, and what has been done in some places can be done in others,—in yours.

Well, now for the **Pay**. On the next page you will see a large list of *first-rate* articles. (See the descriptions of the articles in last month's paper, or, if you have not that number, send to the Publishers for a new copy.) You will see that premium articles are offered for clubs of subscribers all the way from five to five hundred. All these articles are valuable for **use** or for **sale**. Plenty of people canvass as a *business*, and sell the premium articles, and in this way secure from **\$3 to \$30 a day!** We speak not of what *may* be done, but of what *has been* done by many persons, and of what *you* may do. **Try** it with the determination that you will succeed, and you *will*.

And **NOW** is the time to begin. Subscribers beginning now pay no more than if they wait until January. (See page 398.) We enter all new names now coming in, to extend from the time they come until the end of 1870, for the price of one

year, \$1.50. So those subscribing this month get a "Baker's Dozen," or 13 months' subscription for the price of 12.

(Subscribers at club rates, and those in premium lists, all get the extra numbers *free*. This will help canvassers for premium lists, who begin at once.)

NOW, READER,

No Matter where your Location.
No Matter what your Occupation.

these premiums are worthy your attention.—**1st.** By special arrangements we get these premiums (all *first-rate*) on such terms, that we can offer them as we do.—**2d.** You want one or more of them for yourself, or family, or for presents, or for sale.—**3rd.** There are plenty of people who should have the *American Agriculturist*, as it is, and is to be.—**4th.** They will take it, if you set its merits before them, and receive their subscriptions.—**5th.** The premiums will pay you *well* for the trouble, whether you want them for yourself, or for sale.

Our Books for past years show large results, obtained in canvassing by

Farmers, **Clergymen,**
Gardeners, **Teachers,**
Postmasters, **Widow Ladies,**
Merchants, **Married Ladies,**
R. R. Conductors, **Maiden Ladies,**
Clerks, **Girls and Boys,**
etc., etc., etc., etc., etc., etc., etc., etc., etc.

Postmasters, and their clerks, in very large numbers, have easily collected large premium lists. **Farmers** everywhere have secured Animals, Implements, or other articles. **Merchants** have, with profit to themselves and to their customers, made up premium clubs, and frequently delivered the papers at their stores. Many **Clergymen** have readily, often in three or four days, obtained Melodeons, Cyclopedias, Sewing Machines, etc. **Teachers** have supplied themselves with desirable books, etc., in some cases, and in others largely increased their salaries. **Professional Men** have done the same thing. **Railroad Conductors** have also been successful. In one case a conductor on a short local road got more for his premiums than he did from his *regular* salary. Very many **LADIES** have earned more than "men's wages" in canvassing. One lady earned **\$3,250** from September to July last, solely by canvassing for these premiums and selling the articles. Many others may in time secure the same results. (She began with a small number, years ago, and has kept on increasing the number ever since.) **Boys and Girls**, almost without number, have secured the Great Dictionaries and many other articles. Some of them have got a Sewing Machine "for mother."

What Others Have Done You Can Do!

☞ Read the "Special Notes" after the Table of Premiums.

[In the following table is given the price of each article, and the number of subscribers required to get it free, at \$1.50 a year, and at the lowest club rate of \$1 a year. The descriptions of the articles are given in the pages following.]

Table of Premiums and Terms, For Volume 29—(1870).

Open to all—No Competition.

Table with columns: No., Names of Premium Articles, Price of Premiums, Number of Subscribers required at \$1.50, and at \$1. Rows include items like Short-horn Bull, Devon Bull, Cotswold Ram, etc.

SPECIAL NOTES.

Read and carefully Note the following Items:

(a) All subscribers sent by one person count, though from one or a dozen different Post-offices. (b) State with each name or list of names sent, that it is for a premium. (c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. (d) Send the exact money with each list of names, so that there may be no confusion of money accounts. (e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer premiums to canvassers. (f) Specimen Numbers, Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, as they are very costly. (g) Remit money in Checks on New York Banks or Bankers, payable to order of Orange Judd & Co., or send Post-office Money Orders. If neither of them is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

Description of Premiums.

Every Premium is described in the October Agriculturist, and also in a Special Sheet, which will be sent free to every one desiring it. We have room here for the following only.

No. 41—Clothes Wringing Machine.

A very useful, time-saving, strength-saving, clothes-saving implement, that should be in every family. The wringing of clothes by hand is hard upon the hands, arms, and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the garments. We have given thousands of these premiums, with almost universal satisfaction. They are made by the Metropolitan Washing Machine Co., Middlefield, Ct.

No. 44.—Cane Basket.

A new pattern, canoe shaped, nicely chased and very taking. It is from the same makers and of equally good quality as the two preceding premiums: a beautiful table ornament.

No. 45.—Revolving Butter Cooler.

This is a really good and useful article. It is so arranged that a very little ice in the holder under the plate will keep butter cool and fresh for a long time on the table, even in the hottest weather. The cover revolves underneath the plate for use, and over for protection. The whole is in four pieces, which can all be taken apart for washing. From same house as last premium.

Nos. 56, 57, 58, 59—Pocket Knives.

—NOW FOR THE BOYS AND GIRLS!—These Premiums are among the most pleasing and useful that we have ever offered. Every boy, and girl, too, wants a pocket knife. We give them an opportunity to obtain a most valuable one for nothing but a little effort. These knives are made by Mr. J. P. Swain, whose work is equal to any done in this country or Europe. No. 56 is a neat, substantial Knife, with three blades and buck-horn handle. No. 57 is a still finer article, with four blades and buck-horn handle. No. 58 is an elegant Knife, with four blades and shell handle. No. 59 is a Ladies' Pocket Knife, a beautiful article, with four blades and shell handle.

No. 64.—A Good Watch.

The Watches made by the American Watch Co., Waltham, Mass., have peculiarities of excellence which place them above all foreign rivalry. The substitution of machinery for hand labor has been followed not only by greater simplicity, but by a precision in detail, and accuracy and uniformity in their time-keeping qualities, which by the old method of manufacture are unattainable. A smoothness and certainty of movement are secured which proceed from the perfect adaptation of every piece to its place. The extent of the Waltham establishment, the combination of skilled labor, with machinery perfect and ample, enables them to offer watches at lower rates than any other manufacturers. Their annual manufacture is said to be double that of all other makers in this country combined, and much larger than the entire manufacture of England. The mechanical im-

provements and valuable inventions of the last fifteen years, whether home or foreign in their origin, have been brought to their aid, and the presence of over 400,000 Waltham Watches in the pockets of the people is the best proof of the public approval. All of the large number of these watches which were given as premiums last year gave entire satisfaction. We have again arranged with this Company to make for us a Silver watch, jewelled, with chronometer balance, warranted by them as made of the best materials in the best manner, and in pure coin-silver "hunting" case; weight 3 oz. This watch we offer as one of our Premiums, with the fullest confidence. Upon the movement of each of these watches will be engraved, "American Agriculturist." Made by the American Watch Co., Waltham, Mass.

No. 66.—Breech-loading Pocket Rifle.

This remarkable little fire-arm weighs only eleven ounces, yet shoots with great accuracy and power from 30 to 100 yards, or more, and can be loaded and fired five times a minute. It can be carried in a side pocket, and is accompanied by an extension breech, so that it may be used either as a pistol or rifle. It is put up in a neat mahogany case, with 250 rounds of ammunition. The manufacturers are Messrs. J. Stevens & Co., Chicopee Falls, Mass., and the rifles are sold at retail by Messrs. Cooper, Harris & Hodgkins, No. 177 Broadway. This Premium gave great satisfaction last season. Without the mahogany case, we will give the weapon, all complete, with 100 cartridges, packed in a pasteboard box, on receipt of 18 subscribers, at \$1.50 each. For a full description of this beautiful implement, with illustrations, see Am. Agriculturist for Jan, 1869, page 32.

No. 81.—Crandall's Improved Building Blocks.

Building Blocks furnish a most attractive amusement for children. They are very simple in construction, will stand years of children's handling without breaking, and give renewed pleasure daily. Churches, Dwellings, Barns, Mills, Fences, Furniture, etc., in almost endless variety, can be built with them, and the structures remain so firm as to be carried about. For developing the ingenuity and taste of children they are unequalled. The Blocks are put up in neat boxes, accompanied by a large hand-bill giving various designs of buildings. This is one of the most successful toys ever invented. Twenty-five thousand dollars' worth were sold last year by Orange Judd & Co., Sole Agents.

No. 85.—Pocket Lantern.

A very ingenious and valuable Yankee invention—a complete Lantern, large enough to afford light for walking or other purposes, yet it can be folded into a parcel 3 by 4 inches long, and 3/4 of an inch in thickness; it contains 3 little sperm candles, matches, etc. Made by the Merriam Manufacturing Company (Julius Ives & Co., Agents, No. 37 Barclay St., New York).

Nos. 88 to 93.—Volumes of the American Agriculturist.

—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are profusely illustrated, the Engravings used in them having alone cost about \$35,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from XVI. to XXVIII. inclusive. For ordinary use, the sets of numbers unbound will answer quite well.

Nos. 91 to 99.—Bound Volumes of the Agriculturist.

—These are the same as Nos. 88 to 93 above, but are neatly bound in uniform style, and cost us more for binding and postage. Sent post-paid.

Nos. 100 to 111.—Good Libraries.

—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any one of the premiums 100 to 111 may select any books desired from the list of our books published monthly in the American Agriculturist, to the amount of the premiums, and the books will be forwarded, Post or Express paid. \$25 or \$50 worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to make their heads help their hands. Any good book will, in the end, be of far more value to a youth than to have an extra acre of land on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres than he would off from 50 acres without the mental ability which reading will give him. Let the Farmers of a neighborhood unite their efforts and get an agricultural Library for general use.

No. 112.—General Book Premium.

Any one sending 25 or more names may select Books from our list to the amount of 10 cents for each subscriber sent at \$1; or 30 cents for each name sent at \$1.20 each; or 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-nine Premiums, Nos. 29 to 33, 56 to 59, 70 to 74, and 88 to 112 inclusive, will each be delivered FREE of all charges, by mail or express (at the Post-office or express office nearest recipient), to any place in the United States or Territories. The other articles cost the recipient only the freight after leaving the manufacturing of each, by any conveyance that may be specified. See Description of Premiums in Oct. Number.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for the month ending Oct. 13, 1869, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

Table with columns: RECEIPTS, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 26 days this month and 25 days last month.

Table with columns: SALES, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 26 days this month and 25 days last month.

2. Comparison with same period at this time last year.

Table with columns: RECEIPTS, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 26 days 1869 and 26 days 1868.

Table with columns: SALES, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 26 days 1869 and 26 days 1868.

3. Exports from New York, Jan. 1 to Oct. 13:

Table with columns: Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 1869 and 1868.

4. Stock of grain in store at New York:

Table with columns: Wheat, Corn, Rye, Barley, Oats, Malt. Rows for 1869 and 1868.

1868.

Table with columns: Dec. 11, Nov. 10, Oct. 13, Sept. 9. Rows for 1868.

5. Receipts at tide water at Albany to Oct. 13:

Table with columns: Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 1869, 1868, 1867, 1866.

CURRENT WHOLESALE PRICES.

Large table of current wholesale prices for various commodities like flour, wheat, corn, etc., with columns for prices on Sept. 13 and Oct. 13.

Gold has been violently disturbed in price, within the month, by speculative operations, which carried the quotation up to 162 1/2, on the 24th of September, for a few moments. On that day, however, the closing figures were 137 1/2-133 1/2, the speculation having exploded, carrying down a number of operators, and leading to extraordinary confusion, embarrassment, and excitement in and around Wall Street.

In excess of the demand, whether for home use or shipment. A break occurred in the Erie Canal about the 7th of October, since which time the receipts have been less liberal; and as the inquiry has been fair, prices close in favor of sellers. The main export purchases of the month consisted of low grades of flour, and Red and Amber Winter Wheat, and inferior grades of Spring Wheat. The chief purchases of Corn have been for the home trade. Oats have been freely dealt in by speculative operators. There has been more call for Barley and Barley Malt. Cotton has been arriving and selling freely, but at much reduced prices, closing heavily. Provisions have been rather more inquired for, but at irregular figures, Pork closing heavily, while Bacon, Cheese, and Lard, came off buoyantly, and Beef and Butter quite steadily. There has been less animation in Wool, Tobacco, and Naval Stores, at unsettled rates. The Grocery Markets are decidedly brisker. Sugars and Coffee close with an upward tendency.

New York Live Stock Markets.—

Table of New York Live Stock Markets showing weekly ending prices for various types of cattle and sheep.

The supply of Beef Cattle has been large for the month ending October 12, and the market very dull except for the very best droves. We cannot report any improvement in quality over that of last month, which was poor indeed. A large proportion of the stock for the past month has been small Texas steers, rather thin, and the low prices quoted are for such as the drovers say they give away. We have been looking for some time to see our markets supplied with fat cattle, and not quite so many of them. It now takes two steers to weigh as much as one good one did in former times. Below we give the list of prices, average price, and figures at which the largest lots were sold.

Table showing prices for Sept. 21, ranged 10 @ 17c. to Av. 14 1/2c.

Butchers have complained about the changeable weather, and say that large quantities of meat have spoiled on their hands. Small, thin "quarters," too poor to "corn," were sold in many instances as low as \$3.00 @ \$1.00 per quarter on Saturday, Sept. 25. This makes them slow to buy more than they are sure to get rid of at once, and then only the best of each drove. For the week ending Oct. 4th, a few Kentucky Durhams sold for 16 1/2c., but they were really good steers, of 6 cwt. So very few of any kind sold for more than 16c., that 16 1/2c. may be considered the top of the market. We place prices at least 1/2c. lower than was paid last month for the same quality of beef. Milch Cows.—The only change in this department is a more steady call for good cows, of which but few are offered. The majority of the stock is poor—either too old or too long milked. Good fresh cows go off quickly, at from \$85 @ \$90, for first quality. If rather old, \$80 is all they will bring, while common to poor sell all the way down to \$40, or even less, and slowly at that. Calves.—The supply has been a little less, and we notice more "fresh milk" calves, which sell readily at a little advance in price. If very fat and large, 13c. @ 12 1/2c. is paid; ordinary ones sell at 12c. @ 13c. per pound, while poor ones, and grass-fed, go as low as 10c. or even 9c. per pound. Sheep and Lambs are plenty and cheap. Many droves are kept over from day to day unsold rather than suffer loss. Indeed, the sheep, like the cattle, are poor in quality, and too thin for our market, the majority being only fit for "stores." Prices are even lower than one month ago, and much stock is selling by the head at from \$3.00 @ \$1.00 each. We put the decline at least 1/2c., with very slow sales. The best quality of sheep bring 6c. @ 6 1/2c., and Lambs, if fat, 8c. @ 9 1/2c. per pound. Swine.—The arrivals have been plenty and steady, and but few hogs remain over unsold from week to week. The larger proportion are sold dressed, and the market may be considered strong. There has been little change in price. Dressed pork sells for 13 1/2c. @ 13 3/4c., and live hogs at 10c. @ 10 1/2c. per lb.

Petroleum on Wheels.—"Bertie" asks if kerosene will answer as well as crude petroleum to prevent wheels from shrinking. It will not, as kerosene lacks the heavy, non-volatile portion of the petroleum.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Postage.—To our published terms for the American Agriculturist, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be prepaid at the Post-office where the paper is received.

How to Remit:—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of Orange Judd & Co.

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect Oct. 1, 1868, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the Registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money, and seal the letter in the presence of the postmaster, and take his receipt for it. Letters thus sent to us are at our risk.

Bound Copies of Volume XXVII (1868) are now ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (16 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume (50 cents extra if returned by mail). Missing numbers supplied at 12c. each.

Letters—Private, or Personal, or Individual.—All our Editors are expected to be "on the move"—now here, now hundreds of miles away, making observations, or hunting up information. If a letter is addressed to any one of them personally, in his absence, it must remain until his return. A large number, for example, recently came for Mr. Judd, while he was rambling over the West for several weeks—not a few marked "private." On his return many of them were found to be on business which ought to have been attended to weeks before, but no one could pick out these from the others and open them. And just here, by the way, he wishes us to say that he has hundreds of personal requests and favors asked, which it is utterly impossible to answer; the days and nights are not long enough, and there are not enough of them. So please don't take silence for intended neglect. All letters relating to business, and those requiring an immediate answer—in short, all letters not designed exclusively for some individual and to wait his convenient time, should be addressed simply to Orange Judd & Co. They will then be opened by the Publishers, and distributed to their proper departments.

Humbog Explanations.—In another column, under "Sundry Humbogs," a partial explanation of Swindling Operations is given. While traveling through the West we were surprised to find the extent to which these swindlers by Mail and Express are still operating. As many persons read only a religious or local periodical, we believe it the duty of all these Journals to devote frequent space to a showing up of the plausible schemes of this class of thieves. This Journal has kept it up for many years, and has undoubtedly saved many millions of dollars to the country. Our recent observations show that we must keep at the work, even more vigorously than ever. If a dozen or twenty copies of the American Agriculturist be circulated in every neighborhood, they will reduce the number of easy victims so much that the business will die for want of sustenance.

Facts for Advertisers.—The Cheapest Advertising.—"Your terms are too high," is a frequent remark made by those unacquainted with the facts, which are accordingly set forth. An advertisement, say of 10 lines, in this paper costs \$15. If placed before the same number of subscribers (160,000) in other journals it would cost \$30 to \$30. Papers circulating 10,000 to 20,000 charge 30 to 25 cents per line. Thus, the American Agriculturist is the CHEAPEST medium. A monthly magazine is before its readers longer than a weekly; here is a further gain. One insertion, at \$1.50 per line, is equivalent to two at 75 cents, and cer-

tainly cheaper than *four* at the latter figure. A special feature in our columns is the fact that medical, humbug, deceptive, and unreliable advertisers, are rigidly excluded. This is understood by the readers, being frequently and prominently stated. Customers are not afraid to send cash orders to persons admitted here, and the universal testimony of advertisers admitted is, that this fact alone makes this paper the most valuable for their purpose. Good, reliable advertisers are welcome to the benefit of these facts; none others need apply.

Special Premium.—The Emelan Grape.—This remarkable grape is now attracting much attention, being a beautiful black grape of the first quality, and ripening some time before the Delaware. It has already been planted in many different sections of the country, from the Atlantic to west of the Mississippi, and the promises of its success are most flattering. It has proved, generally, vigorous and hardy. The quality of the fruit is, in our judgment, as good as any variety with which we are familiar, except it be the Iona. It has taken the highest premium for quality at many exhibitions this fall. We are convinced that this grape is worthy of general trial, and we shall take much interest in seeing its true merit developed. We have made arrangements with Messrs. Hasbrouck & Bushnell, of Iona, near Peckskill, N. Y., who have the original stock of the vines, and a very superior stock of the young plants, to furnish us a limited number of No. 1, and extra vines, for the purpose of offering them as premiums, and we give our subscribers the benefit of our large purchase by furnishing the vines as premiums at the lowest rate per thousand. We will furnish the *American Agriculturist*, with Emelan vines, as follows:

1 copy for one year and 1 No. 1. Emelan vine for	\$2.50
4 " " " " " 4 " " " "	9.00
10 " " " " " 10 " " " "	22.00
20 " " " " " 20 " " " "	40.00

To parties desiring an *extra quality of vine*, we will furnish

1 copy for one year and 1 Extra Emelan vine for	\$3.25
4 " " " " " 4 " " " "	12.00
10 " " " " " 10 " " " "	29.50
20 " " " " " 20 " " " "	55.00

These vines will be of really No. 1 and extra quality, and will be sent by mail, postage paid, or boxed, by express, the receiver paying express charges only. Orders received too late for sending this fall will be entered, and the vines forwarded as soon as it is safe in the spring.

Cheering Reports come in from all parts of our great farm—the "Universal Yankee nation," the Dominion, and the lands beyond the oceans—in the form of large lists of actual and promised new subscribers for the coming year. The Editors are stimulated to increased effort, and the Publishers ditto. We mean to make a paper useful to all, profitable to all, interesting to all, and we hope to have everybody, and his wife, and his children, read it. The Publishers hold out inducements, on pages 400 and 401, worthy of general and individual attention. All new subscribers received now get the benefit of an extra month free. See page 393.

Agricultural Qualitative and Quantitative Chemical Analysis, after E. Wolf, Fresenius, Krocker, and others. Edited by O. C. Caldwell, Professor of Agricultural Chemistry in the Cornell University. Pp. 200. New York: Orange Judd & Company. In this work Prof. Caldwell has brought together the processes of analysis which apply especially to soils, fertilizers, animals and plants, and their products. He has tested the methods of the best foreign authorities, and presented them, with matter of his own, in a compact hand-book. Such a work has long been needed by all who teach agricultural chemistry, and by analytical chemists generally. The establishment of numerous agricultural colleges throughout the country demands text books suited to their wants, and we are glad to supply one which will be so welcome as the present one. Price \$2.00.

A Premium Bull Takes a Premium.—Mr. Peter W. Myer, Saugerties, N. Y., writes: "Thinking that it may be of interest to you to hear from some of the premium articles sent out by you last year for subscribers to your paper, I have the pleasure of announcing that the Jersey Bull, 'Ticonderoga,' I received of you last spring has taken the first premium at the *Ulster County Fair*, held September 22d, 23d, and 24th. I have also a two-year-old heifer which took the first premium. I was obliged to compete with all others, and upon recommendation of the judges as being 'very fine specimens of Alderneys,' a special premium was awarded to my stock. 'Ticonderoga' has grown to be a fine animal, and will compare favorably with a bull of any other breed. His color is now black, with a beautiful amber band running down his back. Mine were the

only Alderneys ever exhibited at the Ulster Co. Fair, and excited about as much curiosity there, as well as at home, as Tim Baker's Jerseys did."

The Weather and the Crops.—Our rather extensive correspondence at this season enables us to estimate approximately the condition of the crops, especially taken in connection with the crop and weather reports of the Agricultural Department. The inordinate rains which almost deluged a good part of the Mississippi Valley had comparatively little influence upon the wheat crops. Summer wheat suffered most, but, as a whole, the crop is good in quality and large as to yield. Barley and Oats, so far as we can judge, are above average in both yield and quality. The crop of Oats is especially large, and the trials made with the Norway cause a general enthusiasm in regard to it. Potatoes have been damaged by the drought along the Atlantic coast, especially south of New York, but benefited by the rains, we should judge, west of the Alleghanies. At the East the quality of several sorts, almost discarded from the markets last year, is this year above medium, or even excellent. We presume the reverse will be found true where the rains have prevailed. The corn crop has been completely under the ban of the weather, and our great cereal this year is a failure to the extent of not less than one-third the usual crop. Along the entire Atlantic seaboard back fully 300 miles from the coast the drought was very severe upon it; in Ohio, Indiana, and parts of Illinois, the crop is fair. Farther west the rains damaged the crop, and rendered tillage and weeding impossible; but still farther westward the rain was favorable, and great crops are reported from Nebraska, Kansas, and Arkansas. In regard to sorghum we have few estimates, and our readers seem not to be especially devoted to the tobacco crop, for its prospects are rarely reported. However, we believe the general estimates of both crops are favorable to an average yield. Mr. Dodge, the statistician of the Agricultural Department, estimates the cotton crop this year at 2,750,000 bales. The rains have come at the east and south with power and frequency. Fall pasturage is thereby greatly improved, and farmers have done with feeding hay for the present. The amount of hay gathered and well cared is above the average, but the shortness of the corn crop and the high price which that of a good quality bears makes hay high wherever there is a market.

Fattening and Marketing Poultry.—There is an item on Feeding and Marketing Fowls in theHints about Work on page 390, to which reference is made in the following paragraph: *Turkeys* for fattening may be treated much like fowls. They must have very clean coops, and plenty of fresh air. It is well to put charcoal in their feed. The addition of a portion of fresh, chopped beef suet hastens the fattening. Feed no pork scraps within ten days of killing time. It makes the fat soft, and is apt to give an oily look. *Ducks.*—For our own table it is well worth while to feed with meal in which chopped celery leaves are pretty liberally mingled. Get the ducks in the habit of coming to the call, then feed them as often as you can—certainly once in two hours. They will do much better than if confined, and fatten very rapidly. It will pay to buy young live ducks and feed them for table use, if not for market. In feeding, have a basin of water close at hand, and feed late at night and early in the morning. *Geese* should be confined for fattening, fed often, and on rich feed, have fresh water, and be kept clean.

Points of Light Brahmas.—J. W. Warner. The points of Light Brahmas, as regards plumage, are briefly these: The feathers are prevailing white, except those of the tail and the flight feathers at the extremities of the wings. The hackle, or feathers of the neck, are each tipped with black, forming a sort of arrow-head penciling, which should be very bright and clear. The exterior of the "stuff," or the dowy feathers which cover much of the body, must be pure white, but within it may be smoky. The yellow legs must be feathered to the toes, that is to the end of the outside, and, if possible, of the middle toes. The feathers need not be perfectly white, but no other colored feathers but white and black (or gray on the legs) are admissible. Yellow on the cock is bad, and brown or gray on the back, or dark feathers anywhere, except where stated, are inadmissible in show coops.

A Southerner's Impression of Northern Farming.—An intelligent gentleman from South Carolina has been visiting some New York farms. We extract the following from a private note received after his return home. He called on the author of *Walks and Talks*, "whom we found just such a gentleman and farmer as was to be expected. With him we spent a very pleasant, and I hope not altogether unprofitable day, in seeing and discussing farming in that beautiful country, and the next day came as far as Lake Geneva,

where we saw Mr. Sheldon's magnificent herd of cattle and their almost marble halls—the finest herd, his neighbors say, in the world, and we were not disposed to deny it after seeing their broad backs; but it was not until we were many miles away that it occurred to me to ask if anybody ever tastes the tenderloin of cattle which sell for several thousand dollars apiece. * * * In two matters I was disappointed in Yankee farming,—that in spite of all that has been written and said about the preparation and saving of manure, so many of your farmers should expose their stable manure to the deteriorating influence of sun and rain. And in the second place that the profits of farming should be so small. What makes your people so crazy to buy land at \$150 per acre, which will produce about \$40 worth of wheat, when there are thousands of acres of cotton land to be had at \$10 per acre, which, with a little manure, will yield from \$75 to \$100 worth of cotton per acre?"

Sundry Humbugs.—While in a flourishing city at the West, recently, an agent of one of our leading Express Companies informed us that humbug boxes and parcels are still coming to his office for many persons, some of whom pass for men of considerable intelligence. Occasionally one of these boxes is opened at the office by the recipient. The last one opened was stuffed with hay and old newspapers, but at the bottom was a small photograph of U. S. Bills, a "*fac simile*," so called. It cost the recipient \$15, and was not worth three cents, as a picture even. We were happy to learn from him that since a large premium club of subscribers to the *American Agriculturist* was made up there, the humbug parcels received had decreased from about 20 a week to less than 3 a week—a saving of more than \$100 per week to the people there. This is the case, on a larger or smaller scale, wherever this Journal is thoroughly introduced. In every town it has gone into it has saved to the inhabitants many times the entire subscription money. Let it be scattered more widely still. The humbug fraternity are shrewd fellows, who will by new dodges and schemes continue to operate among the ignorant, non-reading class. The occasional newspaper paragraphs are not sufficient to set a community on guard. . . . An explanation will answer sundry inquiries, and be useful otherwise. First, then, let it be understood that the name and P. O. address of nearly every man having a fixed residence in the United States is recorded on one or more lists in this city. These lists include also the names of many ladies, and of young men and women, from the age of 10 or 12 years upwards. They have been gathered from time to time, from postmasters or their clerks, and from numerous other parties, usually under some specious plea, such as a desire to send circulars of a valuable invention, or by paying so much per hundred for their names. They are gathered from newspapers, from reports of Societies, premium awards, at fairs, etc. Parties have offered to sell us the name and address of each of 500,000 farmers, for example. We heard of one swindler who had sent out 1,200,000 circulars to that number of parties. A humbug operator purchases a copy of say 200,000 of these names, probably yours among them, reader. He then gets up a very plausible scheme, such as we have so often described, and sends out his circulars. If well got up, a sufficient number of persons will respond to make his operations successful. For example, he gets a lot of cheap watches, costing \$2 to \$4 each, but so stamped and silvered gilded, as to make them look to be worth \$10 or \$20 to \$100. These, under one plea or another, he works off, getting \$10 or \$12 each, so that if one person in a hundred responds, he makes a large profit above the cost of circulars and postage. A more frequent plan is to make no response at all, but to pocket the whole money received. During our past investigations we have purchased several of these watches, but never yet found one worth three cents as a reliable or even passable time-keeper. As soon as one scheme gets to be too well known, the operator starts a new one, assuming a different name himself; then another scheme and name is assumed, and so on. Two operators have each worked thirty or forty schemes, at least. Several hundreds of schemes we have shown up in this city have been run by a very few operators—Todd, Hubbard, etc., under various aliases. We append a few examples. . . . "The Great Trade Improvement Association," so called, is flooding the country with its very attractive circulars, which are well calculated to catch the unwary. "Engravings" are sold at 50c. each, with a great discount and great premiums promised to those who will help catch the greenhorns. A chance at plenty of watches, etc., said to be worth all the way from \$10 to \$750, is promised to buyers of engravings. As the fools and simple-minded people are not all dead yet, Michelin & Co. will probably do a large business among the class who don't read the *Agriculturist* or the *Mail*. If any of our readers invest, don't tell us about it, for we prefer to believe they are all too intelligent to do so. . . . J. M. Blake and Co. A large number of letters have been forwarded to us, of which the following

is a copy, written under a large printed letter head, and with various dates. These dates were well timed to come out just after our paper went to press last month, probably so as to have time to operate before our next paper should appear. [COPY.]

"604 Broadway, N. Y., Sept. 27, 1869.

"SIR:—About fourteen months since, Messrs. Read & Co. paid us \$200.00 for a fine solid gold Geneva watch, which they stated your ticket, No. 83,111, had drawn, requesting us to send it to you, as soon as \$10.00 per centage was received. We have since then paid \$3.00 taxes on the watch, making the charges on it now \$13.00. Let us know by what express to send the watch, so you can all and get it, and pay the \$13.00 charges to the Express Agent. We are, Sir, most respectfully,

"J. M. BLAKE & Co.

"To, Meriden, Conn."

These letters are all alike, excepting in the date and ticket number mentioned, and from the variation in the handwriting we judge that quite a force of clerks are employed in getting them up. We at first supposed this humbug too transparent to catch any one, but we have letters seriously asking us to call and get the watches and forward them. . . . Wogan & Co. (alias Darly & Co., alias Stevens & Co., alias Noyes & Co., alias Barkley & Co., etc., etc.) have two or more branches. In one kind of circular this concern, with a great show of respectability, pretended to be "Receivers" for Kelly & Co.'s old soldiers-orphans-gift-enterprise swindle. In another department the following is a specimen circular. These circulars are sent to boys as young as 10 years, and unless parents are watchful, their sons will be tempted on to early ruin—though, as a rule, these villainous thieves seldom ever make the slightest answer or return for the money sent them:

"New York, Sept. 15th, 1869.

"DEAR SIR:—Believing you to be 'true blue,' we will introduce for your consideration a matter which will be the means of putting many thousands of dollars in your pocket in a very short time. We have now on hand, ready for circulation, \$850,500 in \$1, \$2, and \$5 bills. They are the best counterfeits ever put on the market, and we defy the Treasury experts themselves to detect them. They are of the same size as the genuine, are printed on first-class paper, are correctly numbered, and are so exceedingly well executed in every respect that they cannot possibly be detected, even by the aid of a powerful microscope. We have them put up in packages of \$500 each. We will sell you \$500 of the \$1 or \$2 bills for \$100; \$1000 for \$180. We shall charge you \$200 per \$1000 on the \$5 bills, as the engraving of the plate cost us considerably more than for the others. If you desire to feel your way before investing largely, we will send you \$500 upon the receipt of \$5 or \$10, whichever you see fit to send us, and you may pay the balance within 15 days after receiving the bills, or we will wait until you arrive. Any railroad ticket agent will take them, because he cannot detect them. Don't show more than \$50 at a time in a place. You can well afford to remit the balance in two hours; but we will give you plenty of time. You may form some idea about the quality of our stock by reading the enclosed extract cut from the *Herald*. The stock is in a safe place, and we defy the sharpest detectives in New York, unless you blow on us, which we know you will not do. Always send money by express or registered letter. We will do the same. Then nothing will be lost in the mails, and everything will work harmoniously between us. If you prefer we will send it by express. C.O.D., packed in such a way as not to excite the suspicion that it is money. Depend upon it, we are in earnest in this matter, and if you take hold of it in a proper manner you can make \$2,000 before November. We have taken every precaution in the execution of these notes to render you as safe as if you were handling good money, for better executed bills were never issued in the world. In case you should be indiscreet enough to let it be known to any one, don't mention where it came from. We have the reputation in New York of being men of good standing, and therefore we will never be suspected of dealing in counterfeit money. If you could manage to come on we could talk freely about the matter, and make arrangements for a big business. If you come on, show this envelope to the man at the desk, and he will introduce you. Don't mention anything about counterfeit money, as he will pretend not to understand you. He will know what's up. We implore you not to betray us in case you are not inclined to go in. State what denominations you wish, how much, and either destroy this or send it back. Address plainly,

"WOGAN & Co., St., New York."

"P.S.—Depend upon it, as long as you are true to us you will never be out of funds."

...None but those having money to throw away will send any money to the so-called "Grand Distribution of \$93,000 worth of Diamonds and Watches, at Cincinnati, Nov. 13th." . . . A Dr. Garnett, or "Gammon," professing to hail from No. 1,976 Broadway, N. Y., and to be employed by the State at \$7,000 a year, is out West curing ears. Is he swindling the State by neglecting his home duties, or robbing foolish Western people with his plausible lies? We can dispose of him in one sentence, viz., there is no No. 1,976 Broadway. The highest No. on that street given in the City Directory is 1,415, and that is away up to West 53d St. Another pretender advertises and writes from this city. Every one of these eye and ear doctors thus advertising is a swindler.

The White Grub in Pennsylvania.

A. J. Woodkok, Bedford Co., writes: "The corn crop has suffered the most severely. In many places it will be an entire failure. The grubs commenced operations as soon as the corn was up in the spring, and are at it yet.

In the first place, they cut off the center root, which checked the growth and stunted the stalk. In many places, even in the most fertile soil, the crop will not average twenty bushels per acre. In examining my field the other day, I found as many as twenty-three at one hill; some of my neighbors have found as high as thirty. Potatoes have been entirely destroyed in many places. Timothy sods are rendered entirely useless (as we believe) for the hay crop the coming season. We are at a loss to know whether to turn our sod for corn this fall or wait until spring. The roots are so completely mown off that the sods can be rolled up in heaps by hand. They are now commencing upon the grain. Some farmers have been obliged to re-sow their entire crop."—This is a sad story, and it would seem from this and other cases that have come to our notice, that our white grub is likely to prove as serious an enemy to our agriculturists as is that of Europe to the cultivators of that country. The perfect insects, the May beetles, may be destroyed in large quantities by shaking the trees on which they lodge, in the morning, and scalding them. For the grubs themselves, no better remedy has been proposed than picking them up at plowing time. In France, children follow in the furrow and collect the grubs. We do not think that any application to the soil will be of use.

Resources of the Southern Fields and Forests.

By Francis Peyre Porcher, M. D., Charleston: Walker, Evans & Cogswell. Pp. 740. Price, \$3.50. Dr. Porcher has long been known as an industrious worker in medical botany, and he has in this work given a quite full account of the vegetable products of the Southern States, with their uses in the arts and medicine. Being a medical man, his descriptions of the remedial properties of plants are more full than those of their other qualities. The work is altogether a valuable addition to our too limited list of those on economical botany.

Cure for Hens Laying Soft Eggs.

"Harlem" finds that of all the cures tried none is so good as bone meal, and says that "some of this mixed with the soft feed once a week is a sure cure."

Salt for Fowls.—"H." asks, "Will the water that ham or salt beef is boiled in be injurious to fowls if used to wet up the meal given to them." We do not like to give salt in any form to fowls.

Death of R. L. Allen.—As we go to press we receive the sad tidings of the sudden death at Stockholm, Sweden, Sept. 23d, of Mr. R. L. Allen, one of the first editors, and subsequently proprietor, of the *American Agriculturist*, author of several agricultural works, and long and widely known and respected as a manufacturer and dealer in agricultural implements. A more extended notice of his life will be in the December number.

Grape Trellises.—"Inquirer," "Vining," and others. Posts should be of the most durable wood to be obtained; five feet out of the ground, and two feet below the surface is a common height; 16 feet apart, with a stake between to support the centre of the wire; No. 10 wire is the usual size. Galvanized wire costs a few cents more per lb. than other, but it lasts longer. The manner of putting up the wire was given last May. If necessary to lay down the vines, they are detached from the wires.

Apple Butter.—A request for directions to make this has called out several replies. A majority of the directions are essentially the same. Cider, fresh from the press, is boiled down to one-half or one-third, then from 2½ to 3 bushels of sweet apples, pared and cored, are added, and the whole carefully boiled, stirring meanwhile to prevent burning. We add three of the recipes differing most widely in their details. "J. B. S.," York, Pa., says: "Have ready on the day previous to boiling apple butter, one barrel of good sweet cider, just from the press; enough sweet apples (say about two and one half bushels) to make one and a half bushels, after being pared, cored, and quartered; a wooden "stirrer" made of a piece of walnut board, two feet long and five inches wide, and having holes to allow it to move freely when being used, and also a handle about eight feet long; and a copper kettle large enough to hold the cider at once. Commence on the second day quite early, as it will require about fifteen hours to complete the boiling. Put the cider in a kettle and start a brisk fire; in about two hours the cider will have boiled down sufficient to put in some of the apples. These are to be added from time to time until all are used. As soon as the apples are put in the stirring commences, and is continued, to keep from burning at the bottom, until the contents of the kettle are removed. As soon as the boiling is sufficient, which is shown by a thick, glossy appearance, the kettle is to be taken off the fire and spices added; cinnamon and all-spice are generally used. The apple butter must be taken

out of the kettle immediately and put into the vessels intended to keep it. Stone ware is best; glazed earthen ware, when quite new, will impart poison to the apple butter." Mrs. Wm. Woodford, Sandusky Co., O., gives the following recipe: "Boil one barrel of cider from sweet apples, right from the press, down to the consistence of thick molasses. Pare and core four bushels of sweet or moderately sour apples, and stew them in a small quantity of fresh cider, or water, until quite soft, and then strain them through a colander. Add the cider molasses, and boil over a moderate fire for about three hours, or until of the desired consistence, stirring constantly while boiling. All the boiling and stewing should be done in brass or copper vessels, and when done it should be stored in wooden or earthen vessels. The cider can be expeditiously boiled down in a copper sorghum evaporator." Mrs. G. W. Spratt, Bangor, Me., makes the apple butter without cider thus: "To ten gallons of water add six gallons of the best molasses, mix them well together, and put it into a large kettle over a good fire. Let it come to a boil, and skim it, as long as any scum rises. Take out half the liquid and put into a tub; have ready eight bushels of fine sound apples, pared, cored, and quartered, and throw them gradually into the liquid that is still boiling on the fire. Let it continue to boil hard; as it thickens add by degrees the other half of the molasses and water; stir it frequently, to prevent its scorching, and to make it of equal consistence throughout. Boil it ten or twelve hours, continuing to stir it. At night take it out of the kettle, put it in tubs to cool, and cover it. Next morning boil it six or eight hours longer. Half an hour before taking it out stir in a pound of mixed spice, cloves, cinnamon, and nutmeg. When done, put up in stone or earthen jars. I use a brass kettle."

"Our Young Folks" continues to be as pleasant and instructive as ever. Perhaps one secret of its success is, that its writers treat the young people as possessed of a good amount of intelligence, and give them interesting reading, without appearing to write down to juvenile comprehension. Any one, old or young, would be interested in the "Story of a Bad Boy." The young scamp has fallen in love, and has become a "blighted being," in a very happy way. Old as we are, we always make it a point to look over Our Young Folks.

Dealers in Implements, Nurserymen, Seedsmen, and all who sell agricultural and horticultural wares, including stock, poultry, fertilizers, etc., should send us their circulars or business addresses if they have not already done so. Our Annuals are now being made up, and we wish to present as complete a directory as possible.

The Christian Union.—The paper formerly known as the Church Union takes a more comprehensive title, and in changing proprietors has introduced improvements, the foremost of which is to secure the services of the Rev. Henry Ward Beecher as editor. The name of Mr. B. alone will secure success to a journal which has heretofore been conducted with ability.

Potatoes by Mail.—A correspondent in Suffolk Co., N. J., sends us a sample of potatoes by express, as the postmaster would not take them to go by mail. The best way in such cases is to ask to see the law, which will soon settle the matter. Hundreds of bushels of potatoes go by mail every year, and this is the first case in which we have heard of any refusal to take them.

No Advice to Sell.—Sometimes 50 cents to \$5 comes in a letter to pay for an answer. We must repeat that this is worse than useless, as it puts us to the trouble of returning the money. When we have any advice to sell we shall publish a card of terms.

Names.—If somebody in some Canterbury, who has written twice about a washing-machine, will tell us in what State he lives, he will get an answer.

Horse-radish.—"L. S.," Salisbury, Mo., will find an engraving of a horse-radish grater given in April, 1867. We do not know who makes them.

Senpfernung Grape.—We are indebted to Mr. E. A. McIntosh, of S. C., for specimens of this variety, which being riper than any we had seen before enabled us to better judge of its character. It has a very leathery skin, but is more sweet and less foxy than we had supposed. It is said that persons accustomed to it become very fond of this variety.

The Weehawken Grape.—"C.," Vienna, O. This is a seedling raised by Dr. C. Siedhof, an amateur, at Weehawken, N. J., from the seed of a grape from the Crimea. We have not heard of its fruiting elsewhere, but with Dr. S. it was productive and healthy.

The "Mexican Everbearing" Strawberry.—The strawberry now called "Mexican Everbearing," and formerly the Maximilian, was exhibited at the meeting of the American Pomological Society. In regard to this, the Michigan Farmer, of Oct. 9th, says that one of the editors of the *Agriculturist* (calling him by name) "and other scientific men gave the stranger their critical attention, and we believe all were obliged to admit that the plant was not the Old Red Alpine, but that it was a variety distinct and new, with valuable properties of growth and production that made it different from any strawberry known to members of the Convention." In the same article it is stated that Mr. Fuller was obliged to "succumb to the pressure of the combined facts with which he was met," and more of the same sort. Mr. Fuller is abundantly able to take care of himself, and we will merely say that he did no such thing as "succumb." As to the editor of the *Agriculturist* referred to, he would say that the statements in regard to him are unqualifiedly false. He expressed no opinion in public, but if he had done so, it would have been to the effect that he could see no difference between the plants shown as Mexican Everbearing and those as Alpine, except that one was grown in good soil and had been watered and cared for, and that the others were neglected plants from poor soil, and evidently selected with a view to make the contrast as strong as possible. We do not know whether this precious report originated with the Michigan Farmer or those interested in the sale of the "Mexican Everbearing" Strawberry. It will not help the sale of the so-called variety, or advance the interests of pomology to put forward statements which have not the slightest foundation in truth. The question of the identity of the fruits referred to is not to be settled by advertising editorials, but by the careful judgment of men who seek to arrive at the truth rather than to sell strawberry plants. We have the "Mexican Everbearing" and the Alpine growing side by side, and hope next season to satisfy ourselves at least, if they are equally poor, or which is the more worthless of the two.

The American Pomological Society.—This Institution held its 12th Biennial Session at Philadelphia, Sept. 15th, and it continued for three days. The attendance was large, and the various parts of the country well represented. The President, Hon. Marshall P. Wilder, gave an interesting address. The time of the meeting was occupied in discussing the fruit lists, which were gone through with great rapidity, as the greater part of the labor had been performed by the Fruit Committees in February last. The previous officers were for the greater part re-elected, and additional Vice-Presidents and Committee members were added for the States not represented at the last session. The next meeting will be held at Richmond, Va., in Sept. 1871, the day to be fixed by the presiding officer. The principal officers are: Marshall P. Wilder, Mass., President; F. R. Elliott, Cleveland, O., Secretary; Thos. P. James, Phila., Treasurer. Every one interested in fruit culture should become a member, as this will secure to him a copy of the Transactions and revised Fruit Lists. Sending \$10 to the Treasurer makes a life-member, or \$2 admits to biennial membership. Socially the meeting was an exceedingly pleasant one, and the most genial feeling prevailed.

Obituary.—In the month of September last, England lost two of her most eminent horticulturists. Robert Thompson, for 44 years connected with the gardens of the Royal Horticultural Society, at Chiswick, died at the age of 71; and James Veitch, whose name is identified with the introduction of so many valuable plants, died at the age of 51. . . . Since the foregoing was written, we learn of the death of Mr. Eugene A. Baumann, which took place at Rahway, N. J., early in October. Mr. B. was widely known as a landscape gardener, and many of the most tasteful places in the country were laid out by him. We have, during the present year, published two small designs by him. Besides being a landscape gardener, Mr. B. was an accomplished horticulturist. He was, if we mistake not, son of one of the Baumann Brothers, of the world-renowned nursery at Bolwiller, France.

The Massachusetts Horticultural Society.—The granite temple of Flora and Pomona, situated on Tremont St., Boston, was again filled with the choicest productions of the garden and orchard at the Annual Exhibition in September last. The library room was devoted to grapes; those grown under glass were very fine, and the show of natives very good for a locality which does not excel in growing this fruit. The lower hall was almost entirely given up to vegetables, and the display—being enthusiastic on vegetables—was grand, *i. e.*, if vegetables ever can be grand. Breese was there with his potatoes, which looked as if they had been made to order in the same mould. Gregory, from the salt corner of the State (Marblehead), showed heads of cabbage as hard almost as marble, and so many other

things that one turned away from his collection with much the same recollection that one has of Mexican *puchero*, where every vegetable that can be had, from pumpkins to peppers, is cooked in the same pot. Such celery and cauliflower! Enough to make one wish to live in Boston, which we certainly should do did we not prefer to live somewhere else. After feasting the eyes on vegetables the fruit in the upper hall looked rather tame. It is useless to tell any one who has seen Boston display its pears anything about it. Those who have not seen them can get no idea from a description, and had better go to the next show. The collection of choice plants was an exhibition of itself, the green-houses of Hovey & Co., Hunnival, and others, affording specimens of great rarity and beauty. The Society has introduced a noteworthy improvement in the way of new exhibition plates. They are shallow, oblong trays, with rounded corners, made of heavy white ware, and stamped with the seal of the Society. Fruit in dishes of this kind shows much better than in ordinary plates; there is a great saving of room, and the tables present an appearance of order and neatness not otherwise attainable. The exhibition closed with the forty-first annual dinner of the Society. President Hyde presided, and near him were Ex-presidents Wilder, Breck, Stickney, Cabot, and Hovey, while the tables were filled by those whose names are familiar to all who are devoted to horticulture.

Cabbages.—Sauerkraut.—"C. H. S.," Ionia, Neb. See "Kitchen Garden," page 399, for method of wintering cabbages. To make sauerkraut, the cabbage is sliced by means of a knife fixed in a frame, and is something like an inverted plane. A clean barrel is lined with cabbage leaves on the bottom and a short distance up the sides. A layer of 3 inches of cut cabbage is put in and pressed down by the hand, and sprinkled with 4 tablespoonfuls of salt. Four layers are put in in this way, and then the whole is packed down hard with a wooden pounder. Four more layers follow, with another pounding, and so on until the barrel is full. Cover with cabbage leaves, and put on a board follower with a heavy weight, and set away to ferment. Remove the scum at the end of three weeks, and if necessary, add water enough to keep the kraut covered. The cutting apparatus was figured in Oct., 1867.

What they Say in Australia.—A correspondent writes from Sydney: "Your *American Agriculturist* contains so much valuable information that is applicable to this country, apart from other interesting, amusing, and instructive items, that a list has been lately opened in Sydney for subscribers, to which I and many of my friends have appended their names, and we hope soon to have the gratification of regularly receiving your valuable publication."—We are rapidly "annexing" all the countries as portions of our territory.

The Pennsylvania Horticultural Society held its annual exhibition at the time of the meeting of the Am. Pomological, and between the two—for no one could tell where one exhibition ended and the other began—the show of fruits was splendid. To the Pennsylvania—the pioneer Society of the country—must fall the credit of the beautiful decorations, mainly of choice living plants. The show of vegetables was poor for anywhere, and especially meagre for Philadelphia, and did we not know how much better in this respect she has done in years past, we should suggest to her growers to come to Washington Market any morning, and see how such things are done around New York. Not only did the Pennsylvania Society afford every facility and aid to the Pomologicals, but at the close of the session gave them a grand banquet, at which ladies, flowers, and music, fruit and fun and wisdom, delicate eatables and good cheer generally, were blended in most delightful confusion.

Downing's Fruit and Fruit Trees of America.—Second revision and correction, with large additions, by Charles Downing. The original work, which is taken as the basis of the present one, was by A. J. Downing, whose name is still retained upon the title page, although it is so much enlarged by the addition of new matter, that the original volume forms but a small portion of the present huge book. We say huge, for it contains more than 1,100 large octavo pages, and is a monument to the patience and zeal which collected so large an amount of material, and the industry which compiled it in its present available form. A work of this kind cannot be perused for review, as its value can only be ascertained, like that of a dictionary, by familiar use. As the name of Charles Downing is a synonym for all that is conscientious and disinterested in regard to fruits, the fruit-growing public will be prepared to accept whatever opinions may be expressed in the book as those of one who had no object in view but the good of the cause to which an industrious

life has been devoted. That many nominal varieties are put down as synonyms and that many over-praised ones have fair judgment rendered them, will displease those who make pomological accuracy secondary to their interest in trade, we have no doubt. In looking over the pages we find that all classification, even by periods of ripening, has been omitted, and the varieties of each kind are placed in alphabetical order. When one of so wide an experience as Mr. Downing gives up the attempt to systematize fruits as hopeless, we may well question if it is possible to group them in a satisfactory manner. The number of varieties illustrated is small in proportion to those enumerated and described, but to introduce more would have still more increased the size of the book, now almost inconveniently large. When we compare the present edition with the modest one which first made its appearance in 1845, we can see to what extent the subject has grown. If only a small proportion of the new varieties that have been added prove valuable, we shall have reason to be proud of our progress. We would add a word in commendation of the very elaborate index, which fills 83 pages, in double columns, and is a good-sized work of itself. Price, \$7.50.

The New Jersey State Fair. held at the fine grounds at Waverly, though opening in the midst of a storm, proved eventually a success. The exhibition was peculiarly rich in Agricultural Implements, especially those adapted to the use of small farmers and market gardeners. The show of fruits, vegetables, and flowers, is rarely surpassed by a simply Agricultural Society. This department and that of horses are understood to be the crowning glories of the shows of this Society. The horse department was, we believe, fully up to the standard, and certain it was that many a capital "heat" was trotted. There were excellent Devons, good Short-horns, very fair Herefords, neat Ayrshires and Jerseys, but the last hardly came up to last year's standard. Poultry was poor.

Another Great Poultry Show.—The N. Y. State Poultry Society, which did itself so much credit by the manner in which its first exhibition was conducted in March last, is now issuing circulars and preparing for another to be held at the same place, the Empire Skating Rink, beginning on the first day of December and continuing to the 9th. This monster building will be heated by steam, and though the weather be severe we may expect comfort within; besides, the offices, ladies' apartments, and restaurants, will be as warm as ordinary sitting-rooms. In addition to a show of poultry, both useful and ornamental, land and water fowls, together with pigeons of all sorts, and animal pets of every name, from ponies to cats and dogs, including rabbits, Guinea pigs,—in short, a real menagerie of pets—the Society offers prizes for fish-propagating apparatus, and the best illustrations of fish breeding as now practiced. The interest excited by the chickens hatching in the incubator, last year, was great, but that of hatching troutlets bids fair to exceed it. The prizes offered are gold, silver, and bronze medals, of different sizes and values, and the best works on poultry, etc. Mr. Geo. H. Warner, of New York Mills, is President, and Daniel E. Gavitt, Secretary.

The "Kentucky" Strawberry.—Our friend, J. S. Downer, of Fairview, Ky., originator of the Downer's Prolific and Charles Downing, has added another of his seedlings, the Kentucky, to the list. Mr. D. has tested this variety for six years, and now offers it as ripening a week or ten days later than other large varieties. A late strawberry has been a desideratum, and we hope to find it in the Kentucky.

Grimes' Golden Apple.—We think that the *Agriculturist* was the first to figure this most excellent variety, in January, 1867, from specimens received from S. B. Marshall, Cleveland, O. We have seen it several times since, and are glad to know that it confirms the good opinion that we then gave of it, and that it sustains its reputation as a full and regular bearer. A kind which is so highly esteemed at the West should have a trial in the Eastern States. The fruit is of medium size, and is in season from January until March. When ripened it is of a beautiful golden yellow. Dr. Warder, in his Pomology, says: "Quality, very best; use, dessert; too good for aught else; those who have tried it say that it is excellent for cooking."

Dwarfing Fruits.—Thos. Middleton (no address). Dwarf Peaches are accidental seedlings of dwarf habit, which are budded on common peach stocks. The Italian, free, and Van Buren's Golden, cling, are the only ones with which we are acquainted. The apple is dwarfed by using the Paradise Apple as a stock. Cherries are dwarfed by budding on the Mahaleb stock. . . . The method of grafting referred to was given as a matter of news. We have had no personal experience with it,

The Farmers' Club.—This remarkable body still meets, and though we are unable to give full reports of the talks it lets loose, we are unwilling that our readers should not have an occasional taste of the richness there poured out. We learn that "Smut is a disease of wheat that is not understood any more than consumption is in the human race." Smut was first correctly described in 1796. In 1805 Sir Joseph Banks published a memoir on the subject, with a colored plate, and since then Brogniart, Tulasne, Berkley, Cook, and others, have made its history as well known to people outside of the Club as that of wheat itself. . . . A well-educated lady, brought up to know the points of a horse and a bullock, has chosen to make an honest living by reporting the cattle markets for a daily paper. One of the clubites described her appearance in the cattle yard, and said, "The gentle sheep opened not their mouths, but the emaciated calves set up a doleful 'Ma, ma, my ma.'" This passed unrebuked, and will probably go abroad in the Transactions, to edify and instruct the world. . . . Here is more "farmers'" talk. One asks how to destroy cabbage worms; the reply is—"Don't have cabbages, as Dogberry would say, it is 'tolerable and not to be endured.'"

Hydrophobia in Cattle.—Mr. A. E. Dowdes, of Chemung Co., N. Y., in a letter to the *Agriculturist*, mentions the loss by a neighbor, David Titus, of several young cattle by this distressing disease. No doubt they were bitten by a mad dog, but without the knowledge of the owner. They sulked standing alone, frothed at the mouth, attacked other animals, anything moving about at times throwing them into paroxysms of raving, doubtless accompanied by severe pain. They were always docile towards their master, suffering him to lead them, administer medicine, etc., without resistance or demonstration of violence. Prof. Law, of Cornell University, declared the disease Hydrophobia, for which no cure is known.

The Best Stock Fowl.—Henry S. Anderson, Ontario Co., N. Y., asks: "What breed of poultry do you consider as the best for raising fowls to sell?—also which is the most profitable to keep, take them all in all?"—We like the Brahmas as a stock fowl better than any other breed. This answers the second question.—There are always more or less fowls which are not up to the standard required for breeding, if the breed is to be kept up. Brahma pullets of this kind, mated with large Dorking cocks, produce a fine large fowl which cannot be excelled by any pure breed for hardiness, quick growth, and ease of fattening.

Chickens.—Precocious Layers.—Cross-bred chickens are often the best as layers or for fattening. "D. B.," of Pittsburgh, Pa., writes: "I had a brood of chickens come out about the 15th or 20th of March. On the 17th of July one of the pullets began laying, and laid 21 eggs in 21 days. Soon after others of the same brood commenced, and all the pullets of that brood have been laying through the month of September. The Dorking blood predominates, and they are, perhaps, a quarter Dominique."

California State Fair.—The Sixteenth Annual State Fair held at Sacramento, in Sept. last, was a success, pecuniarily and otherwise. The Rev. I. S. Diehl gave the address, which was devoted to silk culture. The silk growers and manufacturers made a great display of their products.

Bulls in the Street.—A few days ago we encountered a bull leading a lad of eighteen through the streets of New York. The animal appeared to be two-and-a-half to three years old; he had no ring in his nose, and was controlled in but slight measure by the lad, who was drawn along by his side by means of a cord or small rope, as large as one's finger. The boy shouted, to clear the road, and on they went, the bull stopping now and then to paw dust and bellow wildly. Behind this party came three others, a few months younger. All the bulls were led by poor, miserable little ropes, looking half rotten, and some in several pieces, and none of the boys appeared to be twenty years old. Crossing Broadway, the leader was caught in a rush of omnibuses and swept down with the current a full block, when, somehow, he turned and came back with the ascending stream of vehicles, getting many a crack from the whips of reckless drivers, who would as lief as not witness the fearful spectacle of a mad bull in the streets. The next day we read the account of a bull which escaped from one of the mid-city slaughter-houses, and rushed madly through several of the most crowded business streets, chased by police, and followed by a crowd of one or two thousand persons of all ages and sizes. He was clubbed, shot at, hooted at, and stoned from one end of his route to the other. Persons were gored, run over, shot, and hurt in many ways, and finally the bull was shot and killed. If

the people of New York will have slaughter-houses in their midst, and insist upon allowing cattle to be driven at all times of the day and night through the streets, surely they will not object to either excluding bulls, or, if they are admitted, let them come with rings in their noses, and a strong rope about their horns, and another tied to one fore-leg, so that they may be tripped up and shot if they become unruly.

Planing-mill Shavings, etc.—"J. H.," of Rocky Hill, N. J., wishes to be informed whether pine shavings, fresh from the planing-mill, are useful or injurious as mulch for strawberries, blackberries, and raspberries, and if they are good spread upon sod to be plowed for corn in the spring.—*Ans.*—They are not to be commended as mulch for anything, but may be used in the stables as absorbents of manure, and when decayed or partly decomposed, are useful as an ingredient of manure, but are not worth much. They would be of still less value if spread upon the surface and plowed in, though, unless in very large quantities, they would probably do no harm. When in masses upon or under the soil, such things (sawdust, shavings, etc.) form attractive wintering places for certain insects, and besides remain long undecomposed.

Fertilization of Sand Barrens.—W. S. Young, of Brooklyn, prefers sand to mosquitoes, and writes: "I have been traveling about the east end of Long Island, and am so well pleased with many parts, with the pleasant appearance of the country, its healthfulness, and its freedom from that pest of the west end, mosquitoes, that I would prefer to live there if I knew some way to give fertility to the sand and gravel. Can you tell how I may, at an expense not out of reason, give to one hundred acres of those sandy barrens such permanent fertility that I may raise profitable crops of wheat and corn there?"—*Ans.*—The east end of Long Island is a good deal better to cultivate than the central portions, but it is fair to say that no treatment can give to such soil permanent fertility. We think it may be brought up to yield 20 bushels of wheat or 40 to 50 bushels of corn to the acre, without unreasonable expense, by the use of fish manure and sea-weed compost, and plowing in green crops—buckwheat, corn sown in drills and plowed under when beginning to tassel, and clover,—in all cases keeping the enriched soil as near the surface as possible, until a good degree of fertility is established.

Houses Wanted.—We have received inquiries from parties in remote sections inquiring where ready framed houses can be purchased. Those engaged in the business will find it pay to answer through our advertising columns.

Huckleberry Culture.—"B. G. S.," Cambridge, Mass. We know of no one who has attempted huckleberry culture beyond setting out here and there a bush of the taller kinds as an ornament. Mr. Fuller, in his *Small Fruit Culturist*, suggests that attempts should be made to procure improved seedlings, but we are not aware of any one who has done so. As long as the fruit grows in such abundance in the wild state there is no great temptation to engage in its cultivation.

Hedge Questions.—Several ask why not sow the seed where the hedge is to stand. The young plants are not likely to get so good culture as when grown in a seed-bed. By taking up the plants and burying them, or keeping them in the cellar the first winter, they are saved from the injury likely to result from being thrown out by frost, and besides a greater uniformity in the hedge is secured, as the planter is enabled to assort the young trees. . . . E. Andiger, Ark., has a young Pyracantha hedge, and wishes to know what to do with it. It is difficult to advise without knowing more of its present condition. The great trouble with hedges is in securing a good bottom growth. We have very little experience with the Pyracantha as a hedge plant at the North. White recommends to trim it in the fall in the shape of a broad wedge, one foot high, and six inches broad at the base, and in future prunings the base should increase in breadth four inches for every foot in height. The young growth should be trimmed in June also. . . . "J. H. S.," Huntington, L. I. We should not advise the Osage Orange on Long Island. It is a little too tender. The Honey Locust will suit your purpose much better. Set in spring.

The Queens County Agr. Society (Long Island) held the largest and most successful fair it has ever had last month. There were 115 entries of cattle, 209 of horses, and 207 of poultry, besides a good show of sheep and swine, and a most excellent display of vegetables, potatoes being very fine and in large quantities. There was a creditable show of fruits also, as well as of flowers. The President, S. T.

Taber, and C. H. Jores, each showed good Short-horns, Wm. Norton, excellent Herefords,—not large, but handsome, and well marked,—and Wm. Crozier, the finest Jersey bull we ever saw, and good Jersey and Ayrshire stock. He is an enterprising breeder, with too glib a tongue to praise his own and defame other men's stock. Mr. Crozier also showed Berkshires, as well as Cotswold and Southdown sheep, all of good quality. Mr. H. C. Gavitt, son of the Secretary of the N. Y. State Poultry Society, made an exceedingly fine exhibition of poultry. There were more coops and the fowls were in better feather than at the N. Y. State show. Most of the birds were imported and very choice. Choice birds were also shown by Samuel Willets, and there was in this department its full share of trash. The victualing department seemed to be very well conducted. There was no great show of Long Island manufactures, for a very good reason, good wagons and carriages forming almost a solitary exception. J. R. Decatur & Co., of N. Y. City, and Isaac Hicks, of Hempstead, showed farm implements.

Bresce's New Potatoes.—The new seedlings of Mr. Bresce were tested by the committees of the Mass. Hort. Society, and twenty-eight persons marked their estimate on a scale of 10. The order in which they stood when the votes were counted was as follows: Bresce's No. 6 received 208 marks, and stood No. 1; Early Rose, 2; King of the Earlies, 3; Bresce's Prolific, 4; Bresce's No. 7, 5; Bresce's No. 5, 6.

Pratt's Astral Oil.—Jacob Kirk, Montgomery Co., Pa. The oil is placed on our premium list, which expresses our opinion of it more forcibly than a long article. It is no "safer and better than good coal oil," but coal oil, to be "good," must be equal to Pratt's, which it is not, one time in a thousand.

Planting Walnuts.—J. McClarran, Powshiek Co., Iowa. Walnuts are planted where the trees are to stand, either in rows, which are to be thinned when necessary, or in hills, with two or three seeds in a place. Planting may be done in fall or in spring. If the nuts are to be kept over winter they should be mixed with slightly damp sand.

Setting Trees.—"E. T. M.," Swan Creek, O., writes: "You say that 'the time of setting the trees in the orchard has nothing to do with the bearing.' There are four Pound Royal Apple Trees in Mr. A. T. Blake's orchard, two of which were planted in the fall, and bear one year, and the other two were planted in the spring, and bear the alternate year. How do you account for this state of facts?"—We can readily conceive that either couple of trees may have been so injured by some circumstance attending the fall or spring planting as to give one a year's advantage over the other.

Abronia.—"R. H. J.," Niles, O. Probably the difficulty with your Abronia was too much moisture. We have seen all three, *A. umbellata*, *A. arenaria*, and *A. fragrans*, growing in their native sands, in places so sterile that vegetation was scarce. *A. arenaria* grows upon the blowing sands of the Pacific shore. We have only cultivated *A. umbellata*, and then in exceedingly poor soil, where it did very well. *A. fragrans* is most beautiful when growing wild, but we could not start the seeds in our only trial of it.

Kansas at the Pomological Society.—Kansas deserves a separate item. The State Legislature made an appropriation to defray the expenses of a delegation to the meeting. The Legislature did well. The delegates did well also, for they had something to show and something to say. Only a few years ago Kansas was a State known to most people as something to be wrangled over by politicians. Now she comes with fruits which put the older States in the shade. The collection, for its size and the beauty of its individual specimens, was the principal point of attraction in the room.

Bee Notes.—By M. Quinby.

Apiary for November.—In sections where there is not much buckwheat, many stocks will not have collected honey enough for winter, owing to the cold, wet season. Some of these should be fed, and others taken up, according to circumstances. Where there is not comb enough to hold sufficient honey for winter, I would advise taking up just as soon as the brood hatches. This, after such a summer as the past, will be as early as the middle of October. Where there is comb enough to hold fifteen or twenty pounds of honey, Southern honey, or a syrup made of sugar, may be fed with profit. I notice in the *Bee Journal* a statement to the effect that the addition of a little glycerine will prevent the candying of sugar syrup in the combs. Where comb is wanting, it takes so much

honey to furnish material for making it, that, as a general thing, it does not pay.

How to Feed.—Bees may be fed in box-hives as follows: Bore two or three holes in the top, set on shallow dishes containing the feed mixed with shavings or cut straw, to keep the bees from drowning, and cover the whole with a close-fitting box, so that no bees can get in except through the hive. In case of movable frames, the combs may be taken out and held at an angle of forty-five degrees, and the honey or syrup poured through a flat-bottomed tin dish with some twenty small holes punched in the bottom, into the cells. When one side is filled, the combs can be turned, and the process repeated with the other side.

Impurities of Cross bred Drones.—An article with the above heading, written by Bidwell Bros., St. Paul, Minn., appears in the *Agriculturist* for February, 1867. In this article it is shown by reasons that seem conclusive to them, that the drones from a pure Italian queen, impregnated by a native drone, are inferior in color, and hence, by inference, in parity. Since that time, this statement has been copied by various papers, and, because undisputed, taken for truth. I cannot now say that it is positively false, but my experience is against it. I have no theory to offer, but the fact that in the raising of Italian queens I have observed that the drones from such queens are usually lighter colored, ought to be admitted to weigh something. The question has been raised, Why not test it? This would be no easy matter for any one person under ordinary circumstances. There are few apiaries situated so far from all native bees as to make the mixing of blood impossible. The queen will go three miles or more to meet the drone. Mere opinion is the poorest kind of proof, yet we can have nothing better than this, as it seems, until something more conclusive appears. So far, my experience and conclusions are directly opposed to those of Bidwell Bros. Will other bee-keepers give theirs?

Bee Robbers.—John Würflein, Montgomery Co., Pa., wishes to know if there is any redress at law if his neighbors' bees rob his hives. Also if there is any way of killing the robbers without hurting his own bees.—There is no law that will help him.—I would not suggest any way of killing them, but would recommend keeping them strong enough to prevent robbing, which involves considerable knowledge with a convenient live.

Alsike Clover.—J. Hildreth, Mansfield, O., writes: "I have seen it stated that Alsike clover is good for bees, hay, and pasture. Will you describe it, and state its relative value for these purposes as compared with the common Red Clover."—The Alsike clover seems to be a species between the White and Red. Its leaf is of medium size, and the blossom larger than that of the white, and tinged with red; the stem is erect or nearly so; it grows eighteen or twenty inches high, sending out the flower shoots at the axils of the leaves. I have tried it on sandy soil, and had it do well the second year, making good hay. But it has proved a biennial here, and I should not sow it in preference to the white clover for the bees. A neighbor tried it on clay loam with similar results.

Progeny of Italians.—A correspondent writes: "What I wish to know is how the progeny of a Pure (Italian) Queen may be distinguished from that of an impure, or rather the difference between the progeny of a pure queen by a pure drone, and that of a pure queen by a black drone."—I know of no test of the purity of Italian queens better than the color of their bees, and this varies even with the best. Still, I count as hybrids all swarms that contain any bees entirely black. My experience teaches that of the progeny—that is, the working bees—of a pure queen by a black drone, not more than one-half will show the yellow band, the rest being colored like the natives. The drones from such a queen, however, would be pure Italian and so marked.

The Bee Malady.—Writers continue to describe the bee malady in Indiana and Kentucky, and would like to have the matter discussed. They say, "No one can give a satisfactory solution." It was suggested last winter that the cause of this would be found in some poisonous substance collected by the bees. Instances of a similar kind are not unknown among other animals, and I am still of the opinion that this is the true solution.

Is it Prudent to Buy Bees?—"Would it be prudent for a poor man to buy Italian bees at heavy cost, and run the risk of some disease killing them all?"

Had he inquired if it was prudent for a poor man to buy a cow, horse, or farm, build a house, plant a fruit tree, potatoes, or corn, and "run the risk" of all that might thwart his plans and bring him to grief, I could answer as well. The man who knows what the dairy, the farm, or the orchard needs, what goes to meet, and how to meet them, and feels confident of his ability to do it, would be likely to succeed with either.

So with bees. If he knows their nature and what they need, their instincts, and can avail himself of them—knows the conditions of their most vigorous activity and

health, I have no doubt of his success in keeping bees. He should understand their natural history, learning it by observation for himself, or collecting it from authors on the subject. We first learn the alphabet, then spell, and then read. Let him get some reliable work on the subject, and calculate for himself the chances of success.

Tim Bunker on Cape Cod and Cranberries.

MR. EDITOR:—You see, the way it happened was this. For years after we got back from down South, Mrs. Bunker was the contentedest woman in all my acquaintance. She declared that Hookertown was the center of Connecticut, and the best place in all the world to live in. I should have thought more of that if she had seen a little more of the world. You could not get her out of the house for anything except to go to meeting, and down to Shadtown, to see Sally and the grandchildren, although they insist upon writing the name of the youngest Sallie, which riles her every time she sees it in a letter. There was not a word said agin my holdin' of justice courts in the house, or agin folks coming to see my stock and improvements. She kept on knitting, and baking, and sewing,—so busy that I begun to think she never would go anywhere agin. But things come to slack water last fall, and she actually staid down to Shadtown over night, and made a few visits. I had hopes after this. One evening in February, after reading the recipes in the *Agriculturist* until she nodded, she suddenly lifted her gold-bowed spectacles as if a new thought had struck her. Says she, "Timothy, I guess I'm about ready for another journey. Things don't go right in-doors any longer. I spoiled the last batch of bread I undertook to make, the pies are wretched, the soap did n't come good, and I narrowed the heel of your stocking too soon. It is about time I stepped out."

"Well, where upon earth will you go to this time of year?" I asked,—“Cape Cod, or the Jerseys?” supposing that either place was enough out of the world to discourage common people.

"Cape Cod, if it will suit you just as well. You see, Cousin Dorcas Rogers lives down there, and I have n't seen her since she was up here, ten years ago."

Cape Cod and Dorcas Rogers! This was a stumper. I should as soon have thought of going to the White Mountains or to any other summer resort in midwinter. But I knew it was no use talking when Mrs. Bunker's mind was made up. So I got the trunks packed, thinking all the while, "I guess she'll have a gay time before she gets back." Think of going down to Rockaway beach in February!

An old-fashioned stage-coach set us down at the door of Gilbert and Dorcas Rogers, about two miles from the railroad. It was close by the jumping-off place, and a little further out of the world than I had ever before. They tell about land so poor that the more a man has of it, the worse off he is. It is no joke. I've seen thousands of acres of just such land. I did n't see even a mullein stalk. Pitch Pine comes up there, undertakes to grow, and gives it up as a bad job. I felt bad for the Rogers family, and all their cousins. Says I, "Cousin Gilbert, how do you people live down here on the Cape? I have n't seen anything but stunted trees and herbage down here; all your corn stubble looks blasted."

"Wal," says Cousin Gilbert, "that is the way it strikes strangers generally. But we are about as well off as the rest of mankind. Some go to sea, and the balance raise cranberries."

"You don't mean to say that cranberries pays anything decent?" I asked.

"Folks 'round here think it's about the best business going," he replied.

"And what is good swamp land worth where you can raise them?"

"Anywhere from one to three dollars a rod."

"Don't you mean an acre?" I asked, thinking he had made a mistake.

"No, I mean a rod. It sells from two to five hundred dollars an acre if everything is right about it; and when well stocked with vines in bearing condition, it is worth from a thousand to seventeen hundred dollars an acre."

I opened my eyes at this, but as Cousin Gilbert was Deacon in the church, I did not tell him he was talking loose. I thought so, though. I had noticed a good many cranberry patches as I came down to the railroad, some of them partly covered with water, and some all dry. But I supposed they were wild vines, and did not pay much attention to them.

"Seventeen hundred dollars an acre!" I exclaimed. "That sounds like speculation in city lots. If you can make your swamps worth a hundred dollars an acre, I should like to learn how. Hookertown has thousands of acres of just such land, that can be bought for a song."

"Perhaps not just like it," said Gilbert, deliberately. "All swamp land will not raise cranberries at a profit. You must have three things to make a first-class bog—*muck, sand, and the chance to flow suddenly.* Now, there are a great many bogs that have muck, but no sand or gravel near, and a still greater number that have these, but are so situated that they cannot be flowed in a few hours. Cranberries will grow on almost any muck or peat swamp, but they will run mostly to vines, and yield very little fruit. The sand checks the growth of the vines, and keeps down the weeds and grass. The water guards them against the worms and the frost."

"What is your method of preparing a bog?"

"Wal," said Cousin Gilbert, tipping back in his chair, "it is a good deal more of a job than you would think for. In the first place, you have to skin the surface ten or twelve inches deep, taking off the roots and sods, and making it as nearly level as possible, so that the water will readily cover it and run off. Then you want to ditch the swamp in lands about four rods wide, so that you can drain the land in summer when the fruit is growing. This is about as necessary as flowing in winter."

"How deep do you make your drains?"

"Two feet is none too much. They'll be all the while filling up, and it is better to make thorough work while you are about it."

"And what next?"

"Wal, after you get the muck nicely graded, you spread on about four inches of sand or gravel. The thing has been done down here, and it don't make much difference which you use. The gravel should be free from all surface soil, or dirt, as they call it, so that nothing will grow in it. This can be done at any time of year, but generally best in winter, by spreading the covering upon the ice. When the ice melts, the sand settles very evenly upon the bottom. Some spread the sand directly upon the bog without surfing it. But this does not generally work so well. The surface soil of a swamp is generally full of roots and seeds, which spring up and choke the vines. The soil, also, is too rich, and makes the cranberries run too much to vines. We have learned by experience that there is nothing like poor land for cranberries."

"Cape Cod must be a grand place to learn that lesson," I said.

"That's so. We own up on the poor land,

but this sand just suits cranberries; and as long as folks will buy them, they make us as rich as if we owned Illinois prairies, and we get the ocean, fish, and sea breezes, thrown in for nothing. It is just as well that all parts of the world are not made alike."

This bit of Cape Cod philosophy is worth thinking of, and while your readers are digesting it, I will reserve the cranberry sauce for the next paper.

Hookertown, Conn., } Yours to Command,
Oct. 15th, 1869. } TIMOTHY BUNKER, Esq.

Timber for the Prairies.

BY OUR SPECIAL CONTRIBUTOR—CENTRAL IOWA.

[The immense breadth of fertile land lying between the western line of Indiana on the east, and the Rocky Mountains on the west, a distance little short of a thousand miles, is nearly all prairie. Small tracts of forest are found along the borders of part of the water-courses, and occasionally elsewhere, but these furnish only a very small per cent of the building and fencing material required on the hundreds of thousands of farms, and in the multitude of cities and villages everywhere springing up and expanding. The demand for railroad ties alone will soon be a large item. The first few leading lines of railway have gathered nearly all of the timber available for this purpose. Every mile of railway requires nearly 3,000 ties, each one of which is a pretty large piece of wood. Two lines of railway alone, from Chicago to Omaha, and one line to the Mountains, have used about five million ties. These will nearly all need renewing before new ones can be grown; and many thousands of miles of other prairie railroads are constructed or in progress. Whence is to come the supply for all this demand for buildings, railways, and fencing? The largest supply now comes down the Mississippi, and is distributed east, and especially west of that river; but this source can not be depended upon indefinitely. Indeed, it is said "the cream of the northern forests has already been taken." From our own observation in a recent journey to the Rocky Mountains, we believe it is practicable to profitably produce on the prairies themselves all the timber that will be needed. And if set about at once, it can be done by the time the present available supply will be exhausted. We purpose to agitate this subject, and to call out the best practical information. While in Central Iowa, we engaged the aid of a special correspondent, whose experiments and opportunities for observation enable him to furnish reliable information, and his first article is given below. He will probably visit other portions of the prairie regions, as he has already done, to make investigations, and report not only upon Timber, upon Fencing and Hedging, and upon Fruit Growing, but upon crops and prairie farming generally. In the meantime, we solicit the views, experiences, and observations, of other practical men, actual cultivators on Western Prairies.—Eds.]

Tree Culture, for timber, for fruit, for fencing or hedging, and for shade or windbreak, is one of the most important subjects now engaging the attention of our Western farmers. I will speak in this article of *Trees for Timber*. Two objects are to be kept in view in selecting trees—first, the kind of product desired for mechanical purposes; and second, the usefulness of the trees while growing—in ameliorating the rigor of our winters, the breaking-up of our sweeping wind currents, and thus creating a greater

uniformity of temperature and moisture, and promoting health and comfort. The second consideration is hardly inferior to the first. What trees, adapted to our soil and climate, will best secure these two ends? Practical men differ widely, even in the same locality. I give the result of my own experience and observation.

The White or Gray Willow—the ill-used, the much-abused willow—deserves a first mention. No other tree is so easily propagated; no other grows so rapidly; and no other deciduous or leaf-shedding tree forms so perfect a windbreak. There is scarcely a rod of ground in Iowa, if in any other prairie State, where it can not be successfully grown. It bears *abuse* admirably, both in culture and in print! [Our correspondent has not and never has had any interest in selling willows. We have *seen* how well he and his neighbors grow them for their own use.—Eds.] The timber, like all other very rapidly grown wood, is light, but it makes very good summer fuel, and is useful for a great variety of other purposes upon the farm. It should not be planted near dwellings, as it is liable to be infested with a species of aphid, which sometimes get possession of the house, and is worse than the bed-bug to get rid of.—In a future article upon Hedges, I will give my experience with the willow, and observations of it as a Hedge plant, both of which are conclusive to me that it will make a good fence.

The Cotton-wood and White or Soft Maple are both valuable trees, though perhaps not so in the order I have named them. If necessary to give up either, I should hardly know which to part with. The Cotton-wood makes a remarkably rapid growth, and on account of its ability to stand crowding, and ample foliage, it is valuable as a windbreak. Like the willow, it is easily propagated from "cuttings." It is not a desirable door-yard tree, as it is liable to be stripped of its foliage by beetles, which are annoying around a house, and the trees become bare and unsightly. The comparative value of this tree and the White Willow, as timber, is about the same.

The White Maple is in great favor with us, though I learned recently that in some parts of the State it is being attacked by borers. If this is true, it will be a serious objection to it. I would like to hear from any locality where this is the case. It is hardy and thrifty, free from vermin, and just the thing for the road-side or the front yard. It is easily propagated from the seed, which should be sown as soon as it falls, in mellow soil, and be treated very much like corn. And just here, farmers of the great West, let me entreat you to set out at once, if you have not already done so, a row of these trees on the road-side, against your premises. Set the fence, as the law of Iowa at least allows for such purposes, six feet into the highway, and plant the trees four feet within the fence, so that they will stand two feet from the line when the fence is no longer needed for their protection. At the end of ten years the trees will be invaluable.

The Box Elder (Negundo) and European Larch should both have a place in our grounds. The former has not as yet been sufficiently tested for unqualified praise, and the latter, though superior for timber, is too slow a grower, and too tender to be recommended for extensive cultivation.

The few of our farmers who plant out groves at all make a great mistake in planting *only one kind* of tree. We should imitate nature here, and have more *variety*. White Elm, Linden, Black, and White Walnut, Black Cherry, and a

few hardy Evergreens, such as Spruce, Pine, Fir, and Arbor Vita, should all have a place, not only as a matter of *utility*, but of beauty.—Upon the subject of cultivation nothing need be said, as every farmer well understands how necessary it is to all vegetable growth.

By an Act of the 12th General Assembly of Iowa, every taxpayer who shall plant and suitably cultivate one or more acres of forest trees for timber, shall be exempt from taxation to the amount of \$100 for each acre, and the Board of Supervisors of any County may increase the exemption to \$500 per acre. The Board may also exempt in like manner for every half mile of hedge, and every mile of shade-trees. Finally, do we of the West sufficiently realize this *one great want, Trees?*—trees for timber—for fuel—for shade—for fruit—for fence—for health, beauty, profit? Everything else Nature has given us in abundance and perfection. She always wisely withholds something, leaving something for us to do. Instead of covering up her beautiful work with rocks and forests, she has left it open to the gaze of Heaven, as if proud of the work, and kindly permitted us to put our trees just where we want them, instead of obliging us to hew them out of our way! Let us show our gratitude by completing the job, and put on the finishing touch right speedily.

Poweshiek Co., Iowa, }
October, 1869. }

S.

A Pruning Chisel.

The use of a heavy chisel in pruning has often been advocated in these columns. We give below a description of one used by Mr. J. S. Needham, West Peabody, Mass. The drawing is one-fourth the real size, which is, including socket, 9 $\frac{1}{2}$ inches long, and from the point to the shoulder, 4 $\frac{1}{2}$ inches. Width across the point, 2 $\frac{1}{2}$ inches; narrowest part, near the socket, 2 $\frac{1}{2}$ inches. The cutting edge, which is alike on both sides, is beveled back to a distance of $\frac{6}{8}$ of an inch from the edge. The chisel is $\frac{3}{8}$ of an inch thick near the shoulder, and tapers gradually to a strong point. A somewhat similar tool is made in Pennsylvania, and the manufacturers would do well to place it more prominently before the public. In a note accompanying his drawing, Mr. Needham says:

"I find that by standing upon the ground I can see much better what limbs ought to be removed, to preserve the balance of the tree, as well as those that are soon to interfere and chafe each other. I could make but slow progress with a long-handled saw; and by using a common chisel a portion of the bark on the stub would be started up. This chisel having a concave edge, cuts drawing; the outer edges entering first, operate as a wedge, leaving the dead cut at the center, with very little friction. By having a handle four or five feet long, most of the branches of any orchard of less than twenty years of age can be reached. By placing the chisel drawing-wise, branches 1 $\frac{3}{4}$ inches and less in diameter can be cut off by four or five blows with a common mallet. The stub is left smooth, slightly convex in its center, with the bark unbroken. The work has a finished look, and is done in less than one-fourth the time in which it could be done with a saw. The cost of this chisel, made to order (by a pattern), was one dollar."

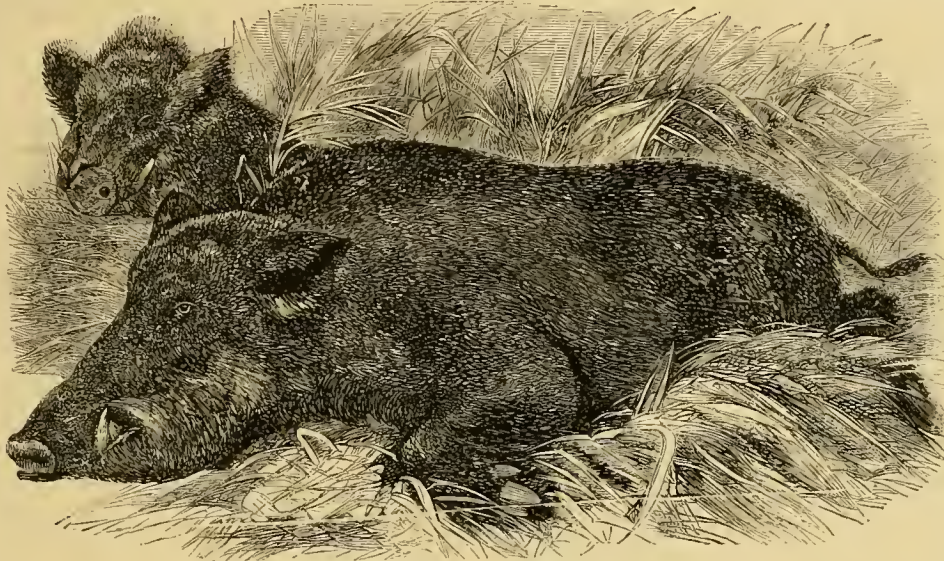


Swine—Their Qualities and our Needs.

Under our present social system pork seems to be an absolute necessity to the community, not only to supply fixed individual wants, but for those of our national army, navy, and merchant marine. An isolated family or a limited community may eschew pork, fresh and salt, abjure lard, sausages, and bacon, and believe that thereby they improve their health, prolong their lives, and add essentially to the sum total of human happiness; but were such a change of practice brought about throughout the country, a revolution would be wrought in trade, commerce, farming, and business of every sort. We raise pigs because they are easily bred and multiply very rapidly; they make a greater amount of flesh upon a certain quantity of feed than any other stock; they lose very little in dressing for market; their flesh will absorb salt enough to keep surely in hot weather without becoming tough and leathery; their fat becomes liquid at a moderate heat, and when pure is nearly tasteless; and because their meat, whether fresh or cured by salt and smoke, is relished by almost every one. These qualities are possessed by no other animal, and if well bred, well fed, and kept and fattened in good health, the hue and cry about the unhealthfulness of pork would be without that foundation which it now unfortunately has. The domestication of pigs has produced great changes in the race, and we have a number of very distinct breeds, which it requires a volume to discuss. Such a work we hope soon to be able to announce from the pen of a well-known breeder. We present herewith two engravings, showing the contrast between the wild hogs still preserved in Central Europe, and the climate reached by English breeders of the large breeds.

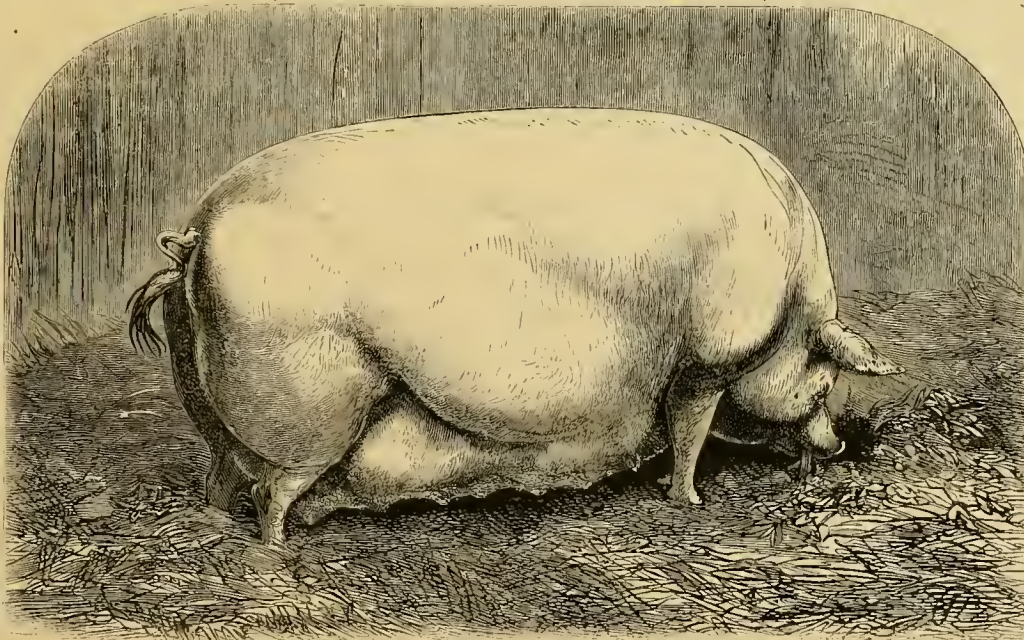
Commissioner Capron tells a story of a Maryland nabob who prided himself on his hogs. On visiting the field in which they grazed, a fine lot of lazy Suffolks were dozing under the fence near the feeding troughs. "See there," said Mr. N., "the lazy brutes! They do nothing but eat and sleep; I like a hog that will earn his own living. Wait until we find mine." After some search they were found in a swale up to their eyes in deep furrows, working away for

grubs, roots, or what not. "There," said the proud proprietor, "are hogs that earn their board." Root, hog, or die! was to him a saying of practical wisdom, and it went directly against his principles to see hogs like the Suffolks simply eat, sleep, and grow. It had never occurred to him that the more hard work and



WILD SWINE OF EUROPE.

rooting hogs did, the less flesh they made. This, however, is the principle. We want breeds of hogs of good constitutions, quiet, lazy dispositions, great capacity for digestion, of rapid growth and easy fattening qualities. No doubt the true principle in breeding for market is to employ large, coarse sows in connection with small, fine males—for thus smallness of offal and excellence in the quality of the flesh are combined with the large size and the great digestive powers of the dam. Better and more profitable, and probably larger, hogs for slaughter may be produced in this way, than from any pure breed.



YORKSHIRE SOW "PARIAN DUCHESS," as drawn by Harrison Wier.

Sows Eating their Pigs.

The Deacon beat me badly on pigs, and the way it happened was this. I bought a big fat sow a short time before her time was up, for a big price, calculating on a dozen pigs at least. She was a little too fat according to my notions,

but then, would not light feed reduce her, and make her chance for a healthy litter as good as that of a lean, half-fed animal? Would she not give richer milk, and would not the pigs grow all the faster? Besides, breeding sows were scarce, and it was this one or nothing. She had thirteen pigs on a cold, windy day, six of which died, in spite of Sam's most careful nursing. But there were seven left, and two-months-old pigs would be worth thirty cents a pound,—rather a cheerful prospect. At a week old, one was strangely missing. It could not have run away, and there was nothing to carry it off. Sam said the cannibal had eaten it alive. He administered a pound of raw pork in slices with the next feed, and the evil was checked there. The Deacon had a lean, wild-looking animal, with a fair proportion of snout, so accustomed to rooting that it took two

rings to keep her in anything approaching wholesome check. She had the run of a small pasture, or what once was pasture, for in spite of the rings I noticed that grass was uncommon scarce, and dead turf plenty. I do not think her rooting propensity was much abated by the rings. This lean, mean-looking animal had eleven nice pigs, and raised them all. The Deacon says he never loses pigs in the fall, when the sows can have plenty of fresh grass, roots, and grubs. Sometimes he has lost them in the spring, when the sows were kept shut up and confined principally to corn meal diet. His

philosophy of pig-eating is this. Swine like some animal food, and especially roots, for which they are furnished with a natural digger. If they can have access to the ground, and get plenty of grubs and roots, their natural appetite is satisfied. If kept upon board floors or in small pens, and fed principally upon meal and slops, they have a great craving for flesh, and not infrequently devour their own offspring. He says the leaner you keep a sow, the more she will root and gather worms and grubs. I think the Deacon carries

his philosophy rather too far, but it may be, like most stories, founded on fact. He recommends feeding sows that have this propensity to eat pigs, with some raw animal food, such as butcher's offal, and plenty of roots, in connection with the ordinary provender. Whatever may be thought of the Deacon's philosophy, he has

beaten me on pigs. They look better and are nearly twice as many. With pigs at thirty cents a pound it counts. CONNECTICUT.

[Our correspondent's philosophy expressed in the first part of his article, that there is little harm in a sow being in good condition, is our firm conviction. The Deacon's notion that raw meat and roots are excellent, we endorse too, so far as feeding roots goes. There is little or no evidence in favor of feeding raw meat, provided the bowels are kept open by roots and a little charcoal and ashes now and then.—Ed.]

Walks and Talks on the Farm—No. 71.

"Did you see anything new at the Fair?" asks the Deacon. "Not much; but I saw what is a good deal better, a great many old friends, and not a few asked me 'Who is the Deacon?'" As I was examining the splendid collection of steel plows and other implements and machines shown by the Remington Agricultural works, a farmer quietly remarked, "That is the plow the Deacon thinks brings in the weeds." They now make a steel plow with a steel "jointer," or little plow in front, for turning an inch or two of the top-soil into the bottom of the previous furrow, similar to the so-called "Michigan double plow," except that it is made of steel, and the small plow has a blade of steel standing up from the point, to cut the sod like a coultter. They say that it is none too heavy for two horses, but I should certainly prefer to put on three, for the object of these plows is to smother the grass and weeds by turning them to the bottom of the furrow and covering them with five or six inches of soil, and consequently we ought to put the plow in pretty deep. I am inclined to think that a jointer makes nearly a horse's difference in the draft. They are also making a double mould-board plow, which must be just the thing for those who believe in hilling up corn and potatoes. The mould-boards can be expanded or contracted to suit wide or narrow rows. It would also be useful for making ridges for turnips and other root-crops. I should like it better if made of steel, for if the land is as fine and mellow as it should be for root-crops, these double mould-board plows are apt to clog.

The Remingtons are also making what we have long wanted—steel teeth or blades, for Shares' harrow. It is a capital implement for covering grain, or for harrowing an inverted sod for corn, or for any crop that requires three or four inches of loose, mellow soil. These steel blades cut the sod to pieces without bringing it to the surface, but turn over and mellow the loose earth.

There was a hand potato digger that some of the officers of the Society, who saw it tried, spoke highly of. It is simply a wide fork with six or seven teeth, with a movable fulcrum behind. The fork is thrust into the soil on one side of the hill, and by bearing down on the handles the potatoes are lifted up, and the fork is shaken up and down on this fulcrum to separate them.

Another thing which attracted considerable attention was Wheeler & Melick's ten-horse-power thrashing machine. It has a contrivance for regulating the blast of the fanning-mill, and the use of sieves is entirely dispensed with. It was in operation on the grounds, and certainly cleaned the grain perfectly, and one of the committee told me that none of the grain was blown over. The manufacturers assented when I told them that farmers would soon refuse to hire thrashing machines that were not driven by steam, but smiled in-

credulously when I told them that we wanted straw carriers that could be elevated as high again as at present. Most of us are obliged to stack our straw in the yard, and the higher we can make the stack, the smaller is the proportion of straw damaged on the roof.

W. H. McKinney, of Ohio, who asked my advice last summer in regard to plowing under clover, sends me the result. He plowed under the clover the last of June when it was in full bloom; cross-plowed the field the last of August; on the 5th of September "ridged the whole field with large shovel-plows, and sowed 1½ bushels of red chaff wheat per acre, and harrowed it with a common A harrow until the ground was level. It grew finely in the fall, and sustained no injury during winter. Like all the wheat in this section it did not start early in the spring, but after a while it commenced to grow and soon left all other fields far behind. About four acres in the field fell before it headed out, and just before harvest we had a heavy storm that laid it badly, so that we had to cut with the reaper all one way. The sheaves were almost as thick as they could lie on the ground. We have just thrashed, and had four hundred bushels from the twenty acres, or twenty bushels per acre, while the average of our neighbors is only fifteen bushels." Mr. McK. adds: "If we have to sell at less than \$1.50 per bushel, we lose money, on account of the high price of labor." There can be no doubt on this point, and it is well to look the fact squarely in the face. There is no business which is not sometimes carried on at a loss, and farming is no exception to the rule. Farmers have no fixed rules in regard to selling. When prices are high, they are more inclined to hold on, in hope that they will be higher; and when prices are low, they are often in a hurry to sell for fear they will be lower. There can be no doubt that wheat ought to be higher this fall than it *should have been* last fall. But it is very doubtful whether we shall get a paying price. Powerful as the agricultural press has become, it is not yet capable of inducing farmers to combine together for their own interests. The time is coming, however, when we shall know how much it ought to cost us to produce a bushel of wheat in an average season, and we shall refuse to sell unless we get a fair price. People must eat, and it would seem that producers had the question of price in their own hands. To a certain extent this is true; but with the modern means of transportation we can never permanently get unreasonably high prices. We have to compete with the whole world, and the problem we have to solve is, how to raise our products as cheaply as it can be done by any other nation. If wages are too high, they must come down. In this respect, however, farmers must compete with other industries. Men will not work for us for less than they can get in the nurseries or market gardens, or on railroads or canals. They will not dig ditches on the farm for less wages per day than they can get for digging sewers in the cities. The trouble at present is, that we have to pay a great deal more in the country than the same class of labor is worth in the cities. Only think of a man earning \$5.25 a day in digging underdrains!

These English ditchers (see Col. Waring's article in October *Agriculturist*, page 374) must think "America's a great country," when they can get 75 cents a rod for making underdrains, and at the same time do the work 25 cents a rod cheaper than the "experienced Irish ditchers." No wonder that Robert Coningsby, who

was here last year, at the request of the Society of Arts, to enquire into the "prospects of the English laborer in America," reports that, while "the English mechanic gains little or nothing by emigration, except the chance of a good gratis education for his children, the unskilled laborer gains in addition a great increase of wages, of comfort, and of liberty, *while the agricultural laborer gains everything.*"

Fifteen cents a rod, in our currency, would be considered a high price for digging and laying such drains in England. And how is it possible that we can afford to pay *five times* as much for the same work here? I have never yet paid more than twenty-five cents a rod for digging a drain three feet deep. Mr. Swan, who laid 55 miles of draining tile on his farm in two years, got his drains dug for twelve cents per rod—but that was before the war. It is much the better way to let out the digging by the rod, but it is not often that you can find men willing to do the work at a fair price. A good plan is to pay the men, say \$1.25 per day, and then agree to give them twenty-five cents for every rod they cut over five rods a day. They are in this way sure of a fair day's wages, no matter what the character of the land may prove, and they have a chance of earning extra wages according to their skill and industry.

Last winter I had considerable ditching done on the plan recommended by Col. Waring—that is to say we laid the tiles as fast as we dug the ditches. It is the only way in which underdrains can be cut and laid in winter to any advantage, where we have heavy snows and zero weather. The system works well when you attend to cleaning out the bottom of the ditch and laying the tiles yourself. It must be done with care and judgment. If there is water enough in the ditch to level by, all that need be done is to cut the ditches deep enough and be sure that the water passes away through each tile as it is laid. I propose to dig some more ditches this winter in the same way. The plan is to take a plowman who can strike out a straight furrow; stick poles where the ditch is to be, and turn two or three furrows on each side of them. Make the first furrow six or eight inches deep, the second one as much deeper as it can be turned over properly, and the last furrow as deep as three or four horses can draw the plow. Go up and down the dead furrow or ditch with the plow two or three times, until the soil is all broken up fine, sixteen or eighteen inches wide, and as deep as possible. Dr. Grant's "Great Trench Plow," figured in the *American Agricultural Annual* for 1868 (pages 49 and 50), is probably the best implement that can be used for the purpose. I mean to get one of them and try it before winter sets in. With such a plow there can be no trouble in getting down at least two feet deep, putting on four horses abreast and going two or three times in the same furrow. The snow settles in these dead-furrows, and the loose soil underneath being a good non-conductor, does not freeze so hard but that a spade can be easily driven through the slight crust. It is much pleasanter work digging such underdrains in the winter when the soil is comparatively dry, than in the early spring when the ground is wet and muddy. If the land needs draining, however, when you get down three-and-a-half or four feet deep, you will find water enough to level by—and this is all that is needed. Chopping was formerly the principal winter work. But with many of us the chopping period has passed, and we have entered on the draining epoch. And it is my

opinion that the work must be done principally in the winter, when other farm work is not pressing. I paid the best men only \$1.00 a day for ditching last winter, and some of the poorer ones only 75 cents, without board. If I had put it off until spring not a man of them would have worked for less than \$1.50 or \$1.75. But being through with the ditching and having little work that *must* be done, they worked all spring for \$1.25 per day. If a farmer who hires men by the day gets behind with his work, the men will do all they can to get him in a tight place and then put the screws on.

To ditch in winter, we must get all ready beforehand. The tiles can be drawn when we have good sleighing, but it is necessary to order them previously. Make up your mind in the fall where the drains are to be cut. If the main drain is to discharge into an open ditch, the ditch should be cleaned out, or "scoured," as the English farmers call it, so that the water will pass off freely. This should be done in the summer or autumn, before heavy rains set in. Make sure of the outlets to the drains. There is danger of the land freezing on the sides of the open ditch, and it is well, after you have plowed out the furrows, to dig out the underdrain from the open ditch as deep as you intend to have it for half a rod or so. Then, when the corn is all husked and the stalks in the barn; when the potatoes are dug and in the cellar, or if put in pits, when the second layer of straw and dirt has been thrown on to make sure of their not freezing; when the sheep and cattle are in their winter quarters and the fat pigs are in the pork barrel; when you have plowed the last furrow, and the implements and machines are all housed; when you wake up some morning to find a foot of snow on the ground, and the atmosphere bright, dry, cold, and stimulating, get a good warm breakfast, and put on a well-oiled pair of boots, and then "what larks!" Chopping has its pleasures, doubtless, because it calls for the exercise of skill and energy, but underdraining far more. The operations are essentially alike. A dull, slow, plodding man never makes a good chopper or a good ditcher. In ditching, as in chopping, it is the "big chips" that count. An energetic man will thrust a sharp, narrow spade into ground where a plodder would think he must use the pick. Men who are riding past on a load of wood, slapping their hands, may think it cold work to dig underdrains with the thermometer near zero. But they know nothing about it. Let the work be performed with the necessary energy, and there will be no necessity for extra wrappings. But good men should not work more than eight hours a day—and poor men have no business in an underdrain.

Two gentlemen from South Carolina came to see my farm a short time since, and the thing which seemed to impress them most was the quantity of grass along the sides of the roads. They seemed to have expected that with our high-priced land, we should economize every inch. One of my neighbors, a thriving German farmer, has made the sides of the road smooth and level, and this year mowed quite a nice crop of hay from them. Too many of us make the road the receptacle for all the stones, sticks, and rubbish of the farm. The thistles come up between the stones. Mowing the grass is out of the question. The best we can do is to top off the thistles occasionally. I know of few things that would add so much to the beauty of the country as to have all the road-sides made smooth and level, and have the grass cut with a mowing machine twice a year.

The thrifty German alluded to is doing too well to have any thought of selling, but if he had I am sure his farm would sell for \$10 an acre more for having such a lawn-like road-side, and for the general air of neatness and thrift which it imparts to the establishment.

These gentlemen said the negroes were doing much better than they expected. The more intelligent of them were working the land on shares, and the others worked for \$8 or \$10 per month and board,—the board consisting of a peck of corn meal and four pounds of pork a week. Another year it was supposed they would demand and obtain higher wages. In reply to a question regarding the profits of farming, they said: "We calculate to make \$200 to each hand. A farmer who employs twenty-five hands ought to make \$5,000 a year." This mode of stating the matter strikes one strangely here at the North; but after all, is it not the true idea? It is from our labor and not from the "acres," that we obtain our profits.

Jason Smith, a well-known farmer of Seneca Co., writes: "Your Walks and Talks in the *Agriculturist* are attracting considerable attention, and are read with interest and avidity. I would like to throw out a few hints and suggestions to strengthen your cause. I highly approve of your advocacy of the practice of summer-fallowing, which, if done thoroughly, is a sure, if not the only economical, means of destroying troublesome weeds, such as the Canada thistle, cockle, Mayweed, white and yellow daisies, pigeon weed, plantain, burdock, ragweed, mustard, quack grass, with a host of summer weeds too numerous to mention. Nearly all of these, except quack grass, can be killed by thorough summer-fallowing in a dry season. Unless we adopt a better system of farming, the weeds and insects will drive us from our farms. The law requiring path-masters to cut the weeds on the road-side at least twice a year is a dead letter on the statute books, and where the law prohibiting cattle from running at large has been enforced, the road-sides during the past wet summer became a perfect swamp of weeds and grass. I think we should petition the Legislature to allow sheep to run in the highways. They are peaceable animals and easily fenced against, and if kept on short allowance, will destroy nearly all kinds of weeds. If this is not done the fences should be dispensed with, and the farmers allowed to cultivate the land up to the road-side. * * There are two methods of eradicating weeds or keeping them in check. The best is thorough fallowing, and the next is keeping the land in grass and cutting the weeds often enough to prevent them from going to seed. They cannot germinate or take root to any extent in a stiff sward. Every farmer should fallow at least one field every year, which, in time, would clear his farm of these pests. In witnessing the operation of a new steam thrashing machine recently, it was disgusting to see how much bulk the feeder had to put through for the quantity of grain. As a general rule, about one-third of the bulk was weeds—and this on farms the owners of which make some pretensions to being model farmers."

Mark you, this is from Seneca Co., N. Y., the home of such farmers as John Johnston, Robert J. Swan, the lamented Ten Eyck Foster, and John Delafield,—a County which has produced more wheat per acre than any other in the State. I fear the picture is not overdrawn. It is certainly true of this section. I think my corn field is tolerably clean (the result of two corn crops in succession five years ago, and the

thorough, almost the excessive, use of the cultivator at that time, together with its free use this season). But with this exception, I do not know of a single field of clean corn, or clean potatoes, or clean beans. Even the Deacon's wheat stubble, though there is a fine growth of young clover, is far from clean. This is in Monroe Co., "the center of the garden of the Empire State," where good farm land is supposed to be worth, and actually sells for, \$125 to \$200 per acre. The remedy is "fall-fallowing," for spring crops, to be seeded down with clover; fall-plowing followed by summer-fallowing for wheat, also to be seeded with clover; planting two hoed crops, such as corn and potatoes, in succession, and the constant use of the cultivator between the rows; and plowing or cultivating in the fall, after the crop is removed. If the wheat or barley stubbles that are seeded with clover throw up weeds, pass the mowing machine over them to prevent their going to seed, and keep down the weeds along the fences, and in waste places and road-sides. A few years of such treatment will clear our farms and do much to enrich them and ourselves at the same time.

Cattle in the Road.

A correspondent complains bitterly of his thriftless neighbors who allow their cattle, geese, and hogs, to run in the road—starving them on their own premises that they may get a starveling living on the highway. They dodge into every open gateway, plunder the garden, tear down the roses from the trellis, mar the flower borders, break the shrubbery, eat the turnips, destroy the paling, and are the pest of the neighborhood. Patience, my good friend. There is a remedy. Your neighbor, who thus torments his friends, is influenced solely by the love of gain. He thinks all that his cattle steal from the highway and from the fields of his neighbors is so much gain to him. You have only to make him feel that it is loss in money and in self respect, to reform him. In most civilized communities you have the law on your side. There is a pound for stray cattle, geese, and hogs, and if they are put in, he cannot get them out without paying the fines and fees. A little faithfulness on the part of the afflicted will soon open his eyes, as well as his purse. He will keep his cattle at less expense upon his own land. There must be no tender-heartedness shown him under the misapprehension that he will make reprisals. Let him if he dare. You are unmanly if you will not defend your own property by all legal measures. He is as full of conceit as an egg is of meat, and as long as he finds that his cattle can steal from the highway with impunity, he will keep them at it. He thinks it is smart to get ahead of the public in this way, and until you can take this conceit out of him, and show him that it is wicked rather than smart, there is no hope of his reform. The pound for his cattle will be a means of grace that he cannot slight. If the law is against you it will take a little longer to reach your result, but it is equally sure. By sufficient painstaking a law can be secured in any township, clearing the highway of cattle. The proposition that a man should pasture his own cattle is so just that few men will argue long against it. Public opinion can be reformed and made right on this subject, and with the law on your side, it will be your own fault if your neighbors thrust their surplus cattle upon your premises. Try the effect of the pound.

Bulls in Harness.

It seems rather strange that the various modes of using the labor of bovine animals—oxen,

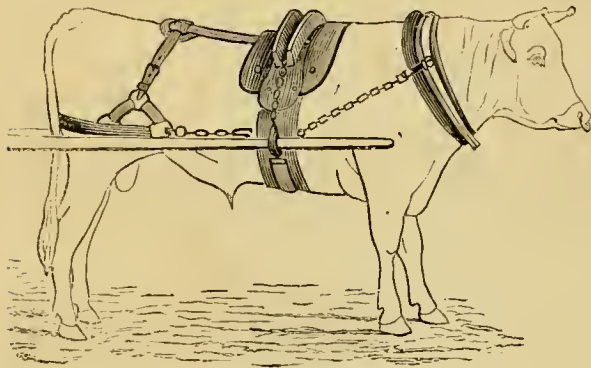


Fig. 1.—BULL IN CART HARNESS.

and bulls—in all times and in all countries, should so universally have contemplated yoking or harnessing them in pairs. Horses have been used singly, both for light and heavy draft, but only now and then some zealous utilitarian or some poverty-stricken peasant has applied the strength, the one of his bull, the other of his

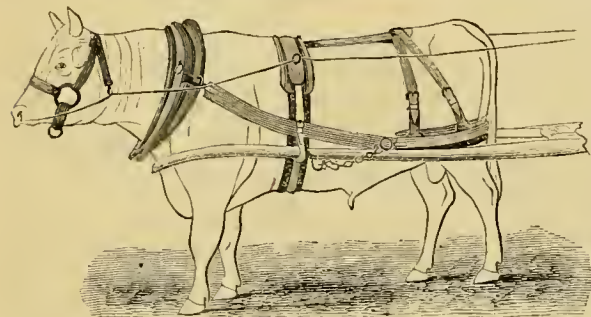


Fig. 3.—BULL IN WAGON HARNESS.

cow, to tillage of the soil or other agricultural labor. We have long had our own notions as to how bulls might best be harnessed, but some time ago set about finding out what other plans were in vogue. To this end we proposed the question in the *Agriculturist*, and have heard from several of our readers.

One who studies the form of the bull, ox, and cow, especially when they are walking, will see clearly, we think, that there are but two points from which they can draw a load. One is where the yoke rests ordinarily as cattle are worked in this country,—the top of the neck in front of the shoulders; the other is the forehead, where the yoke is generally placed in Europe and Spanish America. When oxen are yoked in the common way, they draw chiefly by the yoke,

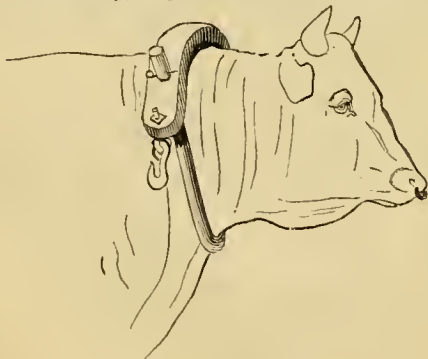


Fig. 5.—BULL IN SINGLE YOKE.

and not very much by the bows, as might be supposed. The ox cannot draw comfortably in a breast collar, that is, by a strap passing around under the neck horizontally, to which

the traces are attached. It would draw across the points of the shoulders, or below them upon the brisket, and in either case would cramp the motions of the fore legs and pain the animal—

we all know how quickly a tight ox-bow will gall the throat; and besides, it would, we presume, interfere with breathing and rumination. The natural and only way for an ox or bull in a state of freedom to exert *all* its power is, by the horns or forehead, so that the animal can *push*, as when fighting. The objections to this mode of yoking oxen are, that their heads are uncomfortably confined when drawing, that a separate neck-yoke

or harness must be used if cattle are worked in a cart or wagon, and (which has not yet been proved) that they draw no easier. These objections, however, apply with less force to yoking single bulls by the head.

The different methods we are now able to suggest are illustrated with considerable minuteness to make them clearer. Figure 5 represents a bull in the single wooden yoke, made like, or, in some cases perhaps, of half a common yoke, than which the ends ought to be longer and more pointed. They should have strong bolts passing

through them, with rings or hooks attached, to which traces may be fastened. This is an awkward contrivance, but strong, convenient,



Fig. 6.—SIDE OF HEAD-YOKE.



Fig. 7.—BOTTOM OF HEAD-YOKE.

and easily made. It may be used with either the cart or wagon harness, as shown in figures 1 and 3, and is not unfrequently seen in New England. Figure 2 is a bull harnessed to draw mainly by a neck-band, connected with breeching straps and traces. The harness goes in front of the brisket, but comparatively little draft comes upon it. When cattle are thus harnessed in pairs, a hold-back chain goes from the breast-piece to the pole. We have the sketch from a friend who has seen it used in the Middle States. Figure 1 shows a bull in a regular horse-cart harness, the collar being simply inverted. A young bull may usually be harnessed in this way, but most old ones would need to have the collar widened. The shape of a bull's neck is such that a large horse collar, that may be opened, will often fit very well. The rings or hooks in the hames for attaching the traces are in just the right places, but, unfortunately, some bulls cannot be harnessed with an ordinary collar; for such collars must be made, or some other plan adopted. Figure 3 shows a common

wagon harness, and figure 4 a plow harness, with collars. The neck-band collar (see fig. 2) would work equally well for plowing.

American preferences condemn the use of

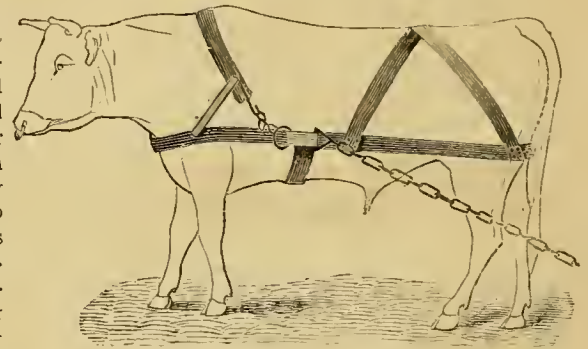


Fig. 2.—BULL HARNESS WITH A NECK-BAND.

the head-yoke, which is represented by figures 6 and 7. Figure 8 represents the head of a bull with the yoke attached. This yoke is made of hickory or ash, the wood being 20 inches long, somewhat curved, 3 inches wide, and 1½ inches thick, tapering to the tips. The ends are ironed,

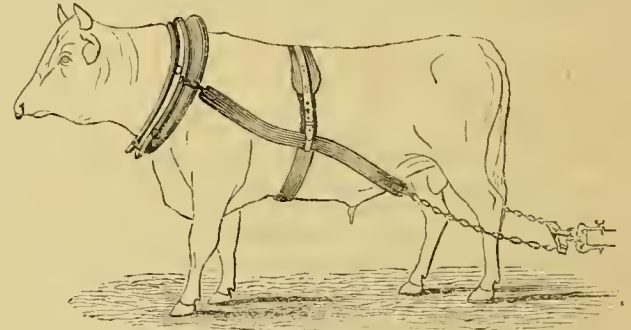


Fig. 4.—BULL IN PLOW HARNESS.

and have strong hooks attached. A leathern cushion is on the inner side of the curve, well padded with hair or moss. Straps passing through holes 4 inches from each end serve to attach the yoke to the horns, so that it hangs free upon the forehead.

Coupling for Double Harrows.

It is often a disappointment to the purchasers of double harrows to find that they are not usually made so as to turn one upon the other without uncoupling. Were this possible, they would be more conveniently handled in loading them upon wagons or sleds. For a special purpose now and then, where a heavily weighted



8.—BULL WITH HEAD-YOKE.

harrow is desirable, as where a spot filled with quack grass exists in the centre of a field, it would often be very convenient to turn one half upon the other, and if more weight were want-

ed, throw a few fence posts on top of that. We give herewith a picture of a coupling used and recommended by Mr. R. T. Smith, of Ulster Co., N. Y. In introducing it to our notice, Mr. S. writes: "There is many a little device scarcely thought of by those who make use of it, which, if it were hung out where people could see it, might prove the very thing which some one had

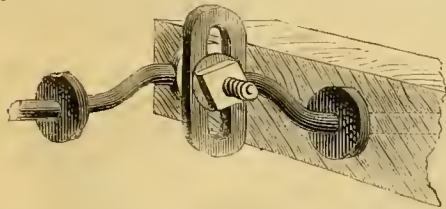


Fig. 1.—HARROW COUPLING.

been long needing to clear the briars out of his path. So, I say to whoever knows of a good thing, put it out in plain sight where every one can see, copy, and use it." [This is good doctrine, and where can anything be put in plainer sight than in the pages of the *Agriculturist*?] "This coupling is better than the common hinge or rod coupling, because it allows freer play of all the parts when at work on uneven ground, and because it allows the harrow to be folded together



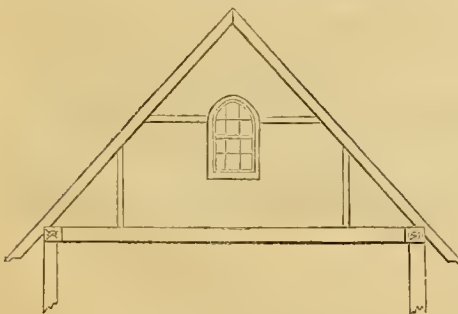
Fig. 2.

for storing or transportation. The coupling rods are of five-eighths inch (5/8-in.) round iron,

extending across the harrows. The coupling seen in the figure consists of a hinge-pin, fastened by a nut and washer, and working freely, in a perpendicular slot three inches long. The part having the hinge-pin upon it is shown, detached, in fig. 2. There are shoulders or collars upon the rods, which bear against the harrow beams, and the rods are furnished with nuts and washers upon the opposite ends. The rods near the joints are bent up so as to bring them as high as the top of the harrow, to facilitate folding." [Double nuts on the hinge-pin would be better.]

Cool Cottage Attics.

Cottages or houses of considerable pretensions in regard to size and style, yet built upon the cottage plan, are often very agreeable upon the ground floors, but most uncomfortable in the chambers. The roofs may be lined with cork chips to keep out the heat of the sun, but this is expensive, and after all the best non-conducting medium is an open air space. Mr. A. B.



SECTION OF ATTIC.

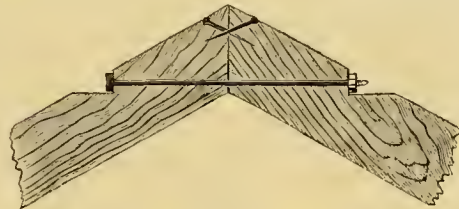
Allen, who edited the *American Agriculturist* nearly 30 years ago, sends us the accompanying sketch and description of his cottage attic. He writes in substance: "By airing the attic story of my cottage according to the above plan, it becomes the *coolest* room in the house, even when the thermometer rises to 102°, as it did

this summer, in the shade, on my north veranda. It is also free from that disagreeable, close garret smell, which attics usually have in hot weather. The top window sash can be let down 12 to 18 inches; this airs the space well between the ceiling of the room and roof. This space is open over the whole from east to west, and as there is a window at each end, of course it has a good chance to air. There is an open space on each side of the room to the eaves. At each corner is a door 2 ft. by 4 ft. opening into this space. Hot days we throw these doors open, and thus have a current of air all around the south and north sides of the attic as well as overhead. The space here is used to store trunks, etc. The attic rooms are 8 ft. high."

The hint thus thrown out may be made use of by those occupying or building houses having the modern French roofs. These are deservedly popular on account of the spacious attic chambers they admit of, though the tendency is to make the top so flat and the pitch below the break in the roof so steep that they are often any thing but handsome. If a free circulation of air can be secured between the ceiling and the roof, and between the side walls and the eaves, they may be made cool and comfortable in hot weather, and the air spaces will prove an effective defence against the cold of winter, preventing the escape of warmth just as they arrest the penetration of the heat of the sun.

"Tieing" Rafters.

Rafters are subject to very unequal pressure, and unless well "tied," roofs are strained.



RAFTERS BOLTED TOGETHER.

Great drifts often pile up on one side of a roof; heavy winds press with the force of tons; and if a roof is strained and yields in the least, it is liable easily to become insecure. Tie-beams are those which cross between opposite sides of a roof and hold them together, forming with the rafters a triangle which is perfectly substantial, unless something breaks. These tie-beams are often in the way when one wishes to utilize the space immediately below the roof. The accompanying diagram is a suggestion by one of our subscribers of a means of obviating the difficulty. He proposes to bolt the tops of the rafters together in pairs, and were every pair to be thus bolted, especially if they had a width of six inches, a roof of small size would be a very substantial one. Larger roofs would still require more or less tieing, according to the length of the rafters and the size of the building. There is, of course, no necessity that the bolt should be entirely concealed—it might extend below the joining of the lower edges of the rafters; yet it should be remembered that long rods for tieing roofs are undesirable, because they are subject to expansion in warm, and contraction in cold weather. Instead of the bolt proposed, a piece of board might be substituted, securely nailed or pinned to the rafters, and encroaching but a few inches upon the space below them. If, however, as in some ornamental structures, it is desirable to show the rafters, concealment of the bolts would be imperative.

The Hawk Nuisance.

Whatever may be said in favor of crows, we never heard an argument in favor of hawks of any kind. Yet among our native hawks are in-

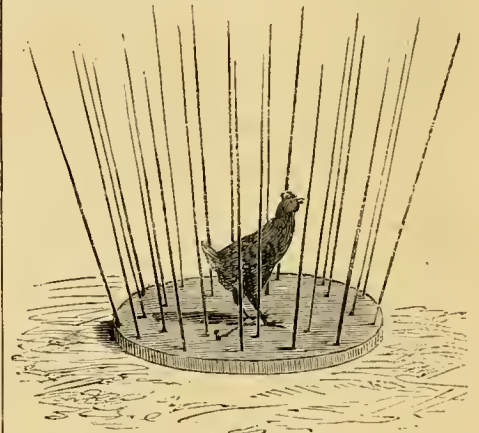


Fig. 1.—WIRE HAWK TRAP.

cluded some of the most beautiful of our birds. When small birds, young rabbits, etc., are plenty, hawks are not very troublesome; but as soon as the young birds have grown and become wary, and the more when the migratory birds have gone southward for the winter, the depredations of hawks begin with vigor and frequency. Late chickens fall an easy prey. Cold weather sharpens the appetites and increases the danger of losses from hawks. When spring comes, hawks are again active and destructive, until the young of other birds and animals tempt them to more secure and secluded hunting grounds. Mr. R. T. Smith, of Ulster Co., N. Y., writes us about a method which he practices for trapping hawks, which strikes us as efficient. He says of it: "To make a first-rate hawk trap take an inch board 12 inches square, and round it; get fifteen or twenty fence wires a foot or fifteen inches long, and set them in the board, spreading or radiating, the exposed ends being sharpened, as shown in the figure. The center wire should stand straight. In setting it, put some dirt and grass over the board, and tie a noisy chicken to the center wire. Do not polish the wires, and have them pretty close together. Place the trap where the hawk will see it, and when he makes a swoop for the chick, you will have him."

This trap certainly has the merit of being a common-sense arrangement, for it is easy to perceive that a pointed wire a foot long would be hard to see, looking directly down upon it.

It is well known that if a hawk is scared and



Fig. 2.—SPRING-POLE TRAP.

made to drop its prey, it is very likely to come back to find it, when it may be trapped or shot. The best trap for this case would probably be a noose laid around the dead chicken, attached to a bent pole, fastened down by a string and peg, which would be loosened by the least attempt to remove the chicken. The noose must be independent of the string holding the pole down.

Earth-Closets in Country Houses.

The *Agriculturist* was the first paper in the country to call attention to the use of Dry Earth as a disinfectant in private closets; and an article in our Agricultural Annual for 1868, "Sewers and Earth-closets in their relation to Agriculture," was the first complete statement made here of the mode of operating the system, and of its many advantages. Since this publication, the Earth-closet has made very rapid advances, and is fast taking its place as an essential accessory of country houses. It is not our purpose in this article to say anything about the contrivance patented by its English inventor, and manufactured by the Company at Hartford, beyond the statement that this apparatus seems to be simple and effective. For further information about it, the reader is referred to our advertising pages. What we do design to do is to show how the system is to be applied to the requirements of householders, without reference to the apparatus by which the principle is applied;—the principle being to throw down after each use of the closet about a pint and a half of sifted dry earth. Whether it is thrown by mechanical appliances or by hand is a question of convenience only,—not of efficiency, for if the earth is thrown it accomplishes its purpose equally, however the throwing may be done.

THE PRINCIPLE is simply this. Ordinary soil, or clayey loam (not sand), if dried in the sun and wind, and sifted through a sieve having three or four meshes to the inch, or being so deposited as to cover the solid faces and to absorb the urine, entirely prevents the escape of the odor of the fresh matter, and of the gases that are formed during its decomposition. Instead of escaping to poison the air, these volatile matters enter the pores of the earth, form a mechanical or chemical union with it, and remain in this connection until, on being used as manure, they are withdrawn by the feeding roots of plants.

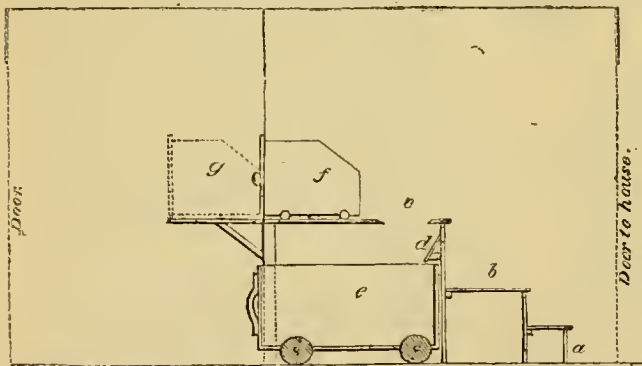


Fig. 1.—SECTION OF HOME-MADE EARTH-CLOSET.

a, Step; b, Platform; c, Seat; d, Slate placed sloping; e, Drawer for Deposit, which may be rolled into the back room to be emptied; f, Drawer with Dry Earth; g, Same drawn back to be Refilled.

Thus, two results of the greatest importance are secured: 1, Gases which are always highly offensive, and often dangerous to health, are locked fast in the vault; 2, The most valuable of all manures,—that one which has hitherto been almost universally wasted, with great detriment to our prosperity,—is not only entirely saved, but so saved that its use is as inoffensive, both in idea and in fact, as that of wood ashes.

THE APPLICATION of this principle allows the occupant of a house in the country to dispense with the unsightly building at the foot of the garden,—approachable by delicate women only by means of a long walk; sometimes bordered and overlaid by wet grass and weeds; sometimes obstructed by snow; always exposed to the weather, and not seldom to public view,—

and to provide suitable closet accommodations in any part of the house in which it may be convenient to have them, more completely inoffensive, and much less costly than the water-closet which is in universal use in sewered towns. It also enables him to save for use on the garden or farm a manure which may safely be valued at \$5 per head for his whole family, old and young, and which, under the present system, he more often than not utterly wastes.

The arrangements for the use of the earth may be whatever the means or the convenience of the individual may suggest. An ordinary vessel with a pint of earth at the bottom, and an equal quantity with which to immediately cover the deposit, is, so far as deodorization and disinfection go, as perfect as the regular earth commode, and it may stand in a sleeping-room for any length of time (filled with the dejections of a cholera patient) without offense to sense or danger to health. A seat over a wooden box in the cellar or back shed, with a box of earth and

a tin scoop at hand, may be used by an entire family without the least inconvenience beyond the necessary attention to throwing down the earth regularly. In the ordinary outer building, all offensiveness may be prevented in the same manner,—but such buildings must soon pass out of use, owing to their cost, their publicity, and especially their inconvenience (an inconvenience which, particularly in cold climates, causes a degree of irregularity that is yearly making the health of our already too delicate women more and more delicate). Believing that the earth-closet system must inevitably be adopted in all places where the water-closet cannot be, and that it will, in time (for economic reasons), entirely supersede even this, we give illustrated instructions for the application of the principle, which will be of use to a large share of country readers.

HOME-MADE EARTH-CLOSETS may be constructed in the house,—or at least in a rear building which may be approached from the house without exposure to the weather. Various plans by which this may be accomplished will suggest themselves to all, according to their circumstances. The engraving (fig. 1) of a section of the end of a wood-shed behind the house shows how a permanent earth-closet

may be easily and conveniently arranged. Those who desire to avoid the slight trouble of throwing down the earth by hand can substitute the simple machinery manufactured for the purpose, by which the earth is thrown whenever the weight of the person is raised from the seat. In this case the upper drawer would be dispensed with, and the earth would be placed directly into the reservoir over the hopper through an opening into the outer room.

The outer room—on the left of the cut—has a glass roof and a ventilator, so that earth taken from an ordinarily dry field will soon become thoroughly dry without further trouble. In this same room there should be a bin in which to empty the contents of the lower drawer, and where they will in due time become so thorough-

ly homogeneous and so dry that they may be used over again. By repeated use it may be made worth as much as the best bone-dust. On a farm, however, where it is an advantage to have all manures as bulky as possible, it will be best to use fresh earth each time. Coal ashes may be sifted and mixed with an equal quantity of earth, as they will not detract either from its deodorizing properties or from its value as manure. Even pure coal ashes may be used in cold weather.

PREPARING EARTH FOR CLOSETS.—It will save much trouble and cost, if arrangements are made to dry the earth for closets as much as possible without artificial appliances. The

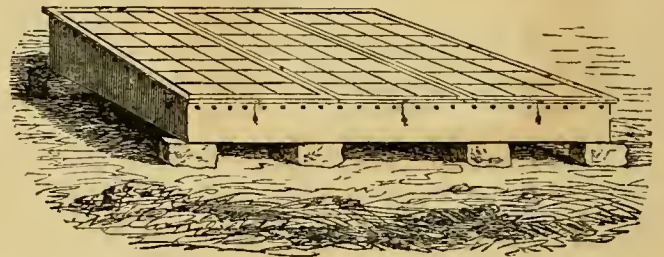


Fig. 2.—FRAME FOR DRYING EARTH.

writer's winter supply was laid in in August, by taking a thin scraping from the surface of a fallow field, while so dry that no further preparation was necessary.

If, however, this cannot be done for want of storage room, it will be a very simple matter to put up a drying-bed, such as is shown in fig. 2. This is made like a hot-bed, but raised slightly from the ground, to prevent the absorption of the earth's moisture, and provided with a floor of rough boards. The floor boards should not project beyond the sides of the frame, lest they catch the water of rains and carry it into the earth. Ventilating holes bored through the sides and ends of the frame, so that the evaporated moisture may escape, will obviate the need for raising and lowering the sashes, according to the weather. The sashes should project an inch or so over the sides, to prevent heavy rains from being driven into the holes, and they should be hooked down, to keep them from being thrown off by high winds. Such a frame, with three sashes (3 ft. x 6 ft. each) would cost about \$15, and would suffice to dry sufficient quantity of earth for the supply of an ordinary family.

It would be better—though somewhat more costly at the outset—to make the glass-roofed room behind the closet large enough to hold a year's supply of earth taken from the field during the summer's drouth.

The quantity of earth required is less than would be supposed. Enough for ten uses of the closet per day, for a whole year, would be contained in a bin 7 ft. long, 4 ft. wide, and 3 ft. high. This earth would be worth at the end of the year—for manure—not less than \$40, which would abundantly repay all cost of handling, to say nothing of the value of having such a convenience in communication with the house, and of immunity from infection.

Storing Roots for Winter.

This is the month for harvesting and securing roots of all sorts; for while mangel wurtzel ought to be taken up and topped before the first killing frost, it is better to leave them in small heaps in the field, covered only with their leaves or with a couple of inches of earth, until the weather begins to be decidedly cold. Then these, as well as turnips and carrots, must be

put away for the season in a manner that they will neither heat from over-crowding, nor be frozen by exposure. There are three ways in which the winter-storing may be done on farms where there is not sufficient cellar room:

1, Long heaps may be made, and covered, first with straw and then with earth. The precautions to be observed here are to secure sufficient vent for the escape of heat and the result-

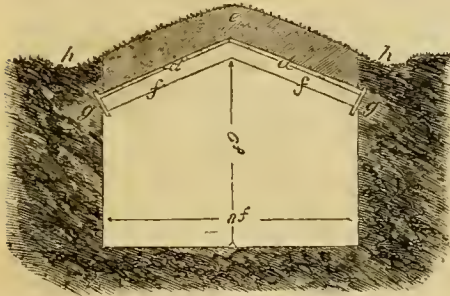


Fig. 1.—CROSS-SECTION OF ROOT CELLAR.

ant gases of slight fermentation; to have a good gutter running all around the heap (and leading away from it on the lowest side); and to put on enough covering for perfect protection.

2, Pits may be dug in the ground ($2\frac{1}{2}$ to 3 feet deep), and tiers of roots carefully laid up, not more than 2 feet thick, and separated from each other by about 6 inches of earth. The layers of roots should have their spaces mostly filled with earth, only enough room being left, here and there, for the escape of heat. When the pit is filled even with the surface of the ground it should be covered with straw or rubbish of a dry character, the thickness of this being gradually increased as the season advances, until we are secure against the hardest frosts;—at first, however, it must not be more than six inches thick, and must lie so lightly as to allow free ventilation to the mass below, this becoming less necessary as the first heating of the roots passes over, and as the weather grows colder. Cornstalks should not be used, as they will lie too closely and communicate decay.

This plan is simpler, cheaper, and safer than the first, and should supplant it in all cases, unless it is impossible to find a spot that is (or can be made) dry for a depth of $2\frac{1}{2}$ feet.

3, The above are makeshifts, and have many disadvantages, the chief of which is the fact that the stock cannot be examined and sorted. The "Field Cellar," which may be cheaply built, is greatly superior to pits. Its construction will be understood from the following directions:

Dig in dry ground a trench $4\frac{1}{2}$ ft. deep, 8 ft. wide, and 10 ft. longer than it is intended to make the cellar. Along each side, $1\frac{1}{2}$ ft. below



Fig. 2.—LENGTHWISE SECTION OF ROOT CELLAR.

the surface, cut out a groove such as is shown in fig. 1, at *g, g*, so as to form an oblique support for a board 8 inches wide lying against its lower side. Procure for rafters either light chestnut posts, or 2×5 spruce joists, saw them to a length of 5 ft., and set up a pair (spiked together at the top) every 3 ft. of the length of the building. Nail cheap boards or slabs on top of these rafters, so as to cover it completely. Openings an inch wide between the boards will do no harm. Cover this roof 12 or 18 inches thick with earth, and sod it neatly, drawing the sod

on each side to a gutter (*h, h*) which will lead away the water of rains. The ends may be closed with double boarding filled in with sawdust, leaves, sea-weed or other litter, and provided with doors wide enough to carry a bushel basket through—the gable over the tops of the doors being left open for ventilation, or, which would be better, supplied with movable shutters. Fig. 2 shows the longitudinal section of such a cellar about 30 feet long, with an area 5 feet long at each end, having steps (*b, a*) for the approach. *C* is the earthen wall of the cellar; *d*, the board roof; *e*, the earth covering; and *ff*, the rafters. In light soils it will be necessary to lay up a stone, brick, or post and board wall against the side of the cellar, and some such protection should always be given to the area at the ends. Such a cellar will last for twenty years, and is thoroughly frost-proof. If made 30 ft. long it will hold—being filled only to the eaves—about 700 bushels. It may, of course, be made wider and higher, and have root bins on each side with a passage-way between them.

Cheap Ice-Houses.

To satisfy the numerous inquiries which every year flow in upon us early in autumn, we must give pretty regularly a chapter on ice-houses. This year almost everybody that inquires asks about cheap houses. The cheapest ice-house we know of is really no house at all. Many years ago we knew of its happening in Virginia, that there was a very cold spell, and a gentleman wishing to save the ice, and having plenty of straw, made a floor of rails, 14 feet square, which he covered with straw two feet thick; then layer after layer of ice was piled up, kept in place by stakes and boards perhaps, and when the pile was high enough, straw was stamped down around it, and a wall built probably six or eight feet thick, and the whole was capped and thatched like a stack. The ice kept well through the summer. All the conditions of a good ice-house were met—drainage, non-conducting walls, and a slight degree of ventilation, or rather a change of air, through diffusion. In whatever way we meet these conditions we shall succeed in keeping ice. The most successful packers put a very thick mass of straw at the bottom.

In building it is cheapest to use good materials. It is rare that we save much in employing cheap lumber. The sills of the building should rest on a stone foundation, to keep them as dry as possible, and it is best to lay this in cement mortar. A tight floor (or a cement floor) may be laid, having a slight incline, in connection with a drain to carry off the water, or the floor may be laid so as to let the water through it. On this rails are laid, which are to be covered with straw, to support the ice. Upon the sills, which may be 10 inches wide and 3 inches thick, a frame is set up of 10-inch hemlock planks, 2 inches thick, 3 feet apart, nailed to the sills with a 3×4 -inch strip, as a plate, nailed outside on the tops of the upright planks. To the planks are nailed the inside wall and the weather boarding. These double walls should hardly be less than 8 feet high, and as the weather boarding is put on, the space between the inner and outer boards is filled with spent tan bark, planing-mill or carpenters' shavings, sawdust, or any similar porous filling, put in dry, and well packed. The roof rests upon the plates described, and it is best to have the eaves extend a good way beyond the side of the building, though not essential. The ice should

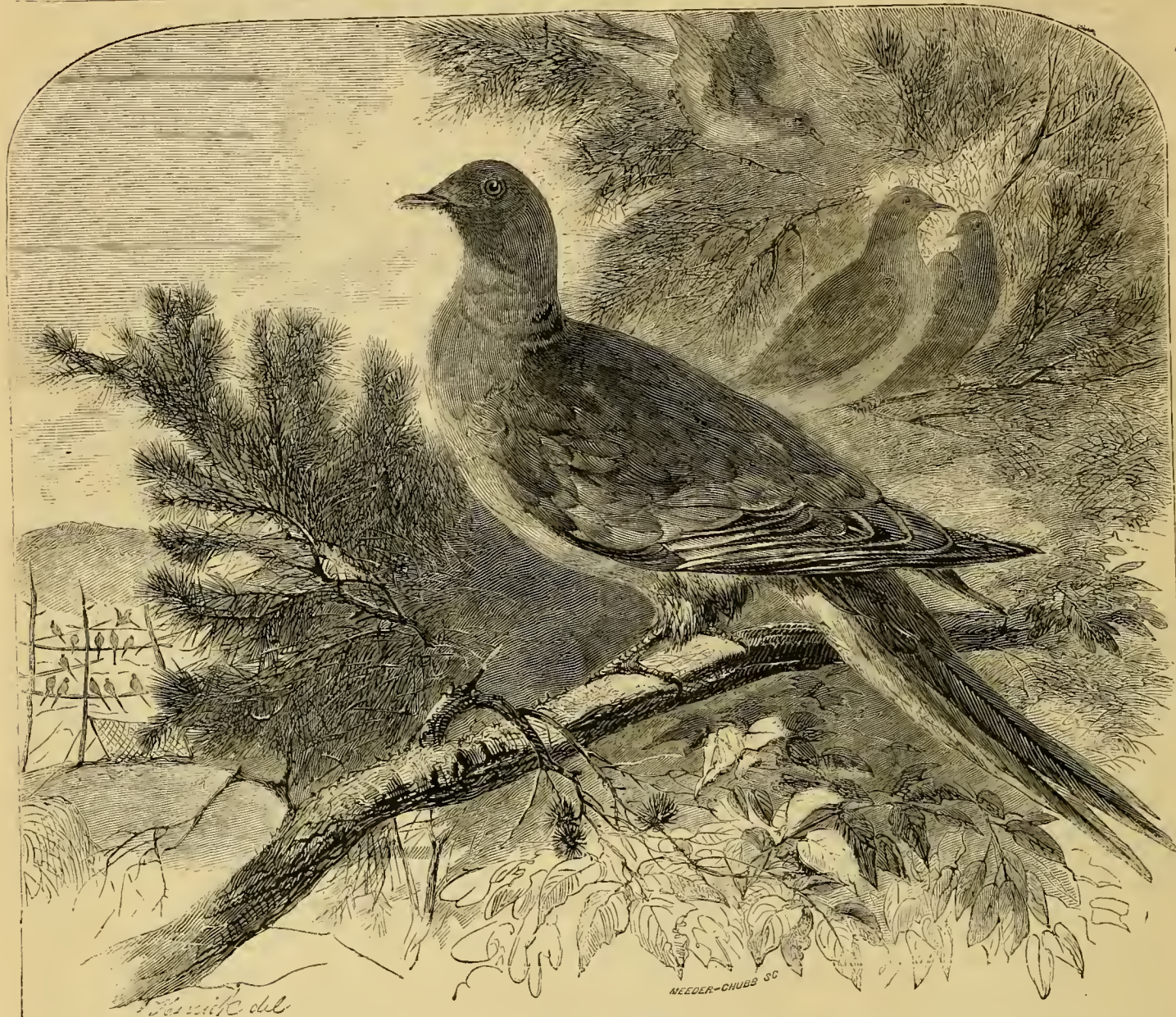
never be filled much if any above the plates, and the best place for the door is in the gable end, above them, although a door may be made in the north end, going nearly to the ground. This is a convenience, both in packing and in taking out the ice, and may remain closed and tightly packed until the house is nearly empty. Such doors are made with a common door for the outside, but within, instead of another door, is a series of boards, to fit horizontally between cleats in the door posts. Tie the roof down, if necessary, by nailing strips from several of the rafters on each side to the plank stanchions forming the walls, or allow some of the stanchions to extend above the plates, and nail or pin them to the rafters. The space between the sill and the roof should be as little as possible, but there should be a few auger-holes or a sliding shutter in the north end, to provide ventilation. With such a house, 12 feet square, or 12×14 , or larger still, we think there will be no difficulty in keeping ice the year round. A structure such as we have described may be built very cheaply if a man does a good part of the labor himself, and any farmer in the country ought to be able to do it all.

A Two-horse Cultivator Wanted.

Mr. Mathias Schafer, of Grant Co., Wis., writes us: "Will you describe a good two-horse cultivator for tearing up and pulverizing fall-plowed land in spring previous to sowing spring grain?"—It depends a good deal on the character of the land. But as a general rule, other things being equal, we should select the cultivator that has the narrowest and sharpest teeth and which are set so as to strike the land obliquely. The trouble with most of our cultivators is, that they are designed for cutting up thistles and other weeds, rather than for tearing up and pulverizing the soil. The teeth are too broad and too straight, and from striking the ground too abruptly they not only tear up too much of the sod but run unnecessarily hard. An implement made on the principle of Share's harrow, with the cutting parts constructed of polished steel, would do good work in preparing sod land. On sod land plowed pretty early in the fall, and when the sod is nearly rotted, a cultivator consisting of a number of small, plow-shaped teeth, made of steel, would answer an excellent purpose. At the Michigan Agricultural College farm we saw a two-horse cultivator (the name of which we have forgotten) at work among the corn, which had two or three sets of teeth that could be changed, according to the character of the land. One set consisted of a number of small plows that would turn furrows perhaps three or four inches wide. We think some such implement as the one referred to would be useful for freshing up and pulverizing the soil in the spring on an early fall-plowed sod. Let us hear from the disinterested cultivators upon this subject.

Is the Largest the Best?

The awards of premiums at the various exhibitions seem to indicate that in the eyes of the judges the largest specimens are the best, and the prizes go to the greatest amount of avoirdupois. Whatever may be the case with some fruits, we are quite sure that in vegetables size is not always an indication of superior quality. It is well enough at a county fair to give premiums for the largest pumpkins, etc., as it is desirable that the fair should be made attractive; but well-estab-



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THE WILD PIGEON.—DRAWN FROM LIFE BY H. W. HERRICK.—Engraved for the American Agriculturist.

lished Horticultural Societies should judge the specimens by quality rather than by quantity. Some of the awards at the late exhibition of the Massachusetts Horticultural Society struck us as being rather strangely made. This Society has a position so well established that it can afford to break away from the custom of considering the largest as always the best, and establish points of excellence for each variety which should guide in awarding the premiums. All who know anything about raising vegetables are aware that by continued selection the size of most varieties can be materially increased; they should also know that this increase in size is often at the expense of quality. Take the Autumnal Marrow Squash as an example. We find this twice the size it was when first introduced, and greatly inferior in quality. So the awards to overgrown potatoes are, in our view, all wrong. The specimens of Early Rose which took the first prize at the exhibition referred to were enormous and beautiful to look upon, but altogether too large to cook properly. Premiums should be awarded to just such specimens as it is desirable should be raised, and those so overgrown that they lose quality, or are too large for table use, should be disqualified.

The Wild Pigeon.

The beautiful bird which the engraving so well represents is a familiar visitant of almost every part of the country from the Gulf of Mexico to Hudson's Bay, and from the Great Plains to the Atlantic Ocean. The Wild Pigeon is remarkable for the migrations which it accomplishes with astonishing ease and rapidity. The natural flight of pigeons is said to be a mile a minute, and their feeding-grounds are often hundreds of miles from their roosting-places, to which they return at night. The number of these birds is hardly conceivable. In going to and from the feeding-grounds the birds often darken the air for hours, morning and evening—while at their roosting-places the trees are loaded to such an extent that great limbs, and even trees, often give way and come crashing to the ground with their living burden. In this way forests of many miles in extent are filled with pigeons for several days, or as long as feed is abundant in the vicinity. Such scenes occur of late less frequently than in former years, yet every year the clouds of pigeons settle somewhere and in larger or smaller flocks. The advance of civilization disturbs them, but with their wonder-

ful powers of flight they easily accommodate themselves to the changes which the settlement of the country brings about. They migrate solely in search of food, feeding upon the beech mast, upon the wild rice and nuts of the West, the rice of the South, or the barley, buckwheat, wild grains, acorns, nuts, and berries, of Canada, or wherever they can find them. They scatter themselves over the country in pairs in the spring, and breed in most or all of the Northern States, when numerous filling the trees with their nests. The cock pigeon is described as "seventeen inches long, and the wing eight and a half inches; the upper parts blue, under parts purplish-red, passing into whitish behind, and the sides and back of the neck a glossy golden violet." The female is smaller and much duller in color of plumage. The head of the Wild Pigeon is small, the bones delicate, but hard and strong, and the muscles of the breast large and powerful. The flesh is rich and excellent, and is highly esteemed as food. In sections where pigeons are moderately abundant, they are trapped in nets, which are thrown over them by means of ropes and poles which are managed by persons lying concealed, while they are attracted to a particular spot by grain thrown for them.



The American Bleeding Heart.—(*Dicentra eximia*.)

one of our prime favorites. The large clump of finely divided leaves is beautiful in itself, and when we add to this the pretty but modest flowers, which commence to bloom in May and continue all summer, there are few plants that excel it. It is perfectly hardy, and is readily multiplied by division of the roots. Our specimens came from the nursery of Hoopes, Bro. & Thomas, of Westchester, Pa. Besides the one just described we have two other native species, which, though not so showy, are delicate and beautiful early spring flowers, and are worthy of a place in a collection. The most common of these is *Dicentra Cucullaria*, popu-



JAPAN ANEMONE—HONORINE JOBERT.—(See next page.)

The beautiful Bleeding Heart (*Dicentra spectabilis*), from China, is well known and highly prized as one of the finest ornaments of the flower garden. We have a native species, which, though not so showy as that, is deserving of more attention than it has yet received. The species is *Dicentra eximia*, and as no common name seems to have been attached to it we call it the American Bleeding Heart. The specific name, *eximia*, means "distinguished," as it is much more showy than either of our other native ones; but in view of the greater showiness of the Chinese, it would hardly do to designate this as "distinguished." The plant is a native of Western N. Y., and southward along the mountains. Its leaves are all radical, of the size and shape given in the engraving, and of a pale glaucous-green color. The flower stems are about a foot high, and bear clusters of rose-colored or purplish-pink flowers, which have much the structure of the larger ones of the Chinese species, though much smaller and less showy. In quite a large collection of herbaceous perennials this is

larly known as Dutchman's Breeches, and the other is *D. Canadensis*, or Squirrel Corn. They are found in rich woods in April and May.

and foliage of the natural size. It grows to the height of eight or ten feet, and produces a great abundance of flesh-colored flowers, which have a peculiar "woody" odor. The nearest relationship of this plant is with the Thoroughworts or Bonesets, and it might with much more propriety have been called Climbing Thoroughwort, than its present popular name, Climbing Hemp-weed, it having neither relationship nor resemblance to Hemp. Like the Thoroughworts, it belongs to the Composite Family, and it is interesting as being the only native climber in that immense family of plants. It has long been cultivated in Europe, and we find it in the French Horticultural works as a desirable plant, though we have never seen it in our gardens. It would certainly make an interesting addition to our list of climbers. It is a perennial, which could be readily transplanted from its native localities, and like the



Climbing Hemp-weed.—(*Mikania scandens*.)

Late in summer and in early autumn, there may be found growing over the bushes which border streams, a pretty climbing plant, of which we present an engraving of the flowers

Cardinal-flower and many other plants which naturally grow in moist places, might flourish in the drier soil of the garden. We introduce it for the purpose of calling attention to its possi-

bilities as a garden plant, as well as to answer several who have inquired for its name. It grows in most parts of the country, North and South.

The Japan Anemone.

The number of late-blooming hardy perennials is so small that any addition to them is welcome. One of the most desirable plants of this kind is the Japan Anemone (*Anemone Japonica*), which though long in cultivation in Europe, is yet but little known in our gardens. It has strongly cut, downy leaves, and throws up a stout flower stem, each of the numerous branches of which bears a red flower an inch and a half or two inches across. There is a white variety called Honorine Jobert, of which a figure is given. The petals (or rather the petal-like parts of the calyx) are of a pure white, surrounding a center of golden yellow stamens. These are beautiful plants when grown as single specimens, and fine when planted in masses. The white variety is particularly desirable, as we have scarcely any other late flowering plant with such a spring-like look. Like other herbaceous perennials, the old clumps may be divided in fall or spring. Mr. Henderson, from whom we received the plants, propagates them by cuttings of the root, placed on a propagating bench, as described elsewhere.

Various Grape Items.

The season has to many grape growers been a disastrous one. The long-continued rains have in some localities at the West reduced the crop to far below the average, and we hear some reports of total failure. At the time of writing we are without statistics to show what the loss has been, and the early injuries to the fruit may be supplemented by those from early frosts.

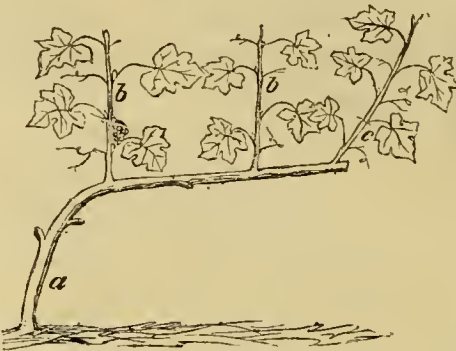
New samples with new names have appeared in about the usual numbers, but very few of these are worthy of notice. Persons who have seedlings are apt to place a higher estimate upon them than can be done by a disinterested person. A variety should be, in some particular, better than any other grape of its season to make it worthy of propagation. Some seedlings of the Delaware have been brought us which were white and of the same general appearance as that variety, but with a very tough skin and lacking in good qualities. Fox grapes, strong in odor, tough in hide, and solid in pulp, have been less abundant than in former years.

The new sorts that have attracted the most attention are two hybrids by Stephen W. Underhill, of Croton Point, N. Y. The Croton is a white grape, a cross between the Chasselas de Fontainebleau and the Delaware. The bunch is long, with a large shoulder and often winged, the berries of fair size, of fine amber color and of a pleasant flavor. Its foliage shows but little of the tenderness of the foreign species. We have seen Mr. U.'s vines, of which he has a number in bearing, and they are hardy and healthy in an unfavorable locality. The proprietor makes no extravagant claims for this grape, and is willing that it should rest upon its own merits, and we hope that it will succeed elsewhere as well as it does at Croton Point. The Croton received this year the silver medal of the Massachusetts Horticultural Society.

The Senasqua, also raised by Mr. Underhill, is a cross between the Black Prince and Concord. It is a large black, but rather late grape, of high vinous flavor, and resembling in its flesh the foreign varieties. Avery's Prolific is a black

grape, originating with John P. Avery, Norwich, Conn., much resembling the Hartford. It received the premium last year at the New London Co. Fair as the best new variety. It is claimed to be very prolific and early. The specimens sent for our inspection were over-ripe.

Several who raise seedlings complain that they blossom and do not bear. It is a very common thing for seedlings, whether wild or cultivated, to produce imperfect flowers, and where this is the case no fruit will be produced



ARM OF GRAPE VINE.

if the pistil is imperfect; but should the stamens be wanting or inefficient, fruit may be obtained by planting a fertile vine, which blooms at the same time, near the barren one. Such vines, however, are not worth taking any trouble with.

A subscriber has a vine, of which he sends a sketch; it starts with two canes from the ground, one of which is represented in the engraving. He proposes to train it on the arm and spur system, as we infer. The two canes spread wide apart at the bend, and the vine would be much more compact if the arms were crossed, and the right-hand one put in the place occupied by the left-hand one, and *vice versa*; but this is not essential. The canes *b b* should be cut back to two buds, when the leaves are off, and in February the upper bud may be cut off, leaving but one, which will produce a fruiting cane; the next year two buds may be left at pruning. The cane *c* should be used to extend the vine horizontally. It should be shortened to about two feet and bent down horizontally, to form a part of, and extend, the arm.

Notes from "The Pines."—No. 6.

Next to having a man who will do less than he is told, it is most annoying to have one who does more than is laid out for him. In the kitchen garden were rows of Summer Savory, Thyme, Sage, etc. The Summer Savory being ready, the man was told to pull it. He did so, and more than that, he in the same summary manner pulled the Thyme also. As this last had some months yet to grow, the loss was provoking. To slightly alter the words of the poet, we now "take no note of thyme but from its loss." The Sage was saved; whether its name *Salvia* (from *Salvo*, to save), had anything to do with the matter, is not yet decided. As to Sage culture: a Massachusetts grower writes that where it is grown on a large scale they sow it in rows, where it is to stand, and thin and weed the same as carrots and similar crops. Shall try this next year.

Among other odds and ends, tried to see what they were like, was some Cow Cabbage or Cæsarean Kale. It is a broad-leaved variety of Kale, said to grow six feet high. Ours has more than a month of growing weather before it yet, and is over three feet high upon soil which is far

from rich. It is probable that it would give a greater weight of fodder on poor soil than would cabbage. If the seeds are sown the same as those of late cabbages, and the plants put out where early crops have been taken off, a very large supply of green fodder may be raised.

If I am fond of anything it is melons. Not those tasteless, mealy things which some people appropriately call *mush*-melons, but lusciously sweet, fine-grained, and juicy. The best sorts, including some with unpronounceable names from the Department of Agriculture, were planted, and made a fine start. Then came the long drouth, and the vines were so thoroughly rested that when the rains came they forgot to grow again, and instead of having melons by the hundred, they came only by the dozen. Of the varieties which perfected, Ward's Nectar, though small, proved of first quality in every respect. Alton Large Nutmeg is large and of very good quality, but with us a little late. Good reports of it come from the West. Mr. Gregory, of Marblehead, gave me a taste of his Hybrid Japan, which was the nicest thing in the way of a melon I have tasted this year. By the way, why is it that in catalogues and in exhibitions, melons are placed with vegetables? Artists who paint fruit pictures always introduce them where they belong, among fruits.

Last year there appeared in the *Agriculturist* an article on having greens all the year round. Midsummer is the most trying time, as spinach, the main reliance, cannot endure the hot weather. There has not been a day all summer upon which we could not have an abundance of greens. The Spinach Beet and New Zealand Spinach follow spinach and last until frost comes, when the Borecole or Kale will be ready.

Propagation by Root Cuttings.

There are some plants which can be successfully multiplied only by cuttings of the roots. Not many years ago this method of propagating was kept as a sort of horticultural secret by the professional gardeners, but of late, thanks to the numerous popular books and papers, it has become generally known, though not as generally practised as it might be. Among our small fruits the Blackberries, and those Raspberries which naturally produce suckers, are largely and cheaply multiplied by root cuttings. Among ornamental shrubs, the Japan Quince, Sweet-scented Shrub (*Calycanthus*), Buffalo-berry, and others, grow readily from roots. In the same manner such trees as Locust, Pawlonia, Ailanthus, Osage Orange, etc., may be multiplied. A large number of herbaceous perennials, both hardy and green-house, are most satisfactorily produced from root cuttings, such as Anemones, Boccenias, Saxifrages, Perennial Poppies, Bouvardias, and many others. The florists increase their stock of many ornamental things by placing the root cuttings upon the sand of the propagating bench, and covering them slightly with sand mixed with leaf-mold or some similar substance, to make it light. The engraving shows a cutting of a Japan Anemone, with the bud just starting. The cuttings of trees and ornamental shrubs will, for the most part, succeed if planted in well-prepared soil in the open air. The cuttings are made three or four inches long and dibbled in, taking care to place the root in its natural position, and covering entirely with one or two inches of earth. With the Blackberry and Raspberry it is found advan-

tageous to callus the roots before planting. The roots are taken up before the ground freezes, cut into pieces of one to three inches long, and



ROOT CUTTING.

stratified with earth in a box—a layer of earth and a layer of roots. The box has holes bored in it to allow any water to pass off, and is buried below the reach of frost in a place where all moisture can be drained off. The object is to keep the roots from freezing, and yet so cool that buds will not start too soon. In the spring the root cuttings will be found callused and furnished with buds, and may be planted. The subject of propagating by root cuttings has not received the attention it deserves. Mr. A. S. Fuller, in his *Small Fruit Culturist*, and Mr. Peter Henderson, in his *Practical Floriculture*, have given good accounts of the process; but there is still an interesting field for experiment.

Grape-vine Tendrils—A Sport.

There has been some discussion of late in the horticultural journals as to the nature of the tendrils of the grape vine. The view generally held has been that the tendril is a barren flower cluster, and the fact that the clusters often are part bunch and part tendril is cited in proof. As we consider a flower cluster a modified branch, we may look upon a tendril in the same light. To support this view of the case we sometimes have tendrils bearing leaves. Last year we found tendrils with leaves on our own



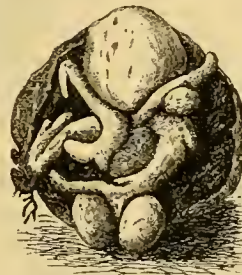
VINE TENDRIL BEARING A LEAF AND BUD.

vines, and this year, Mr. R. W. Holton, of Haverstraw, N. Y., has sent us still more interesting

specimens, in which the tendril not only bears leaves, but buds push from their axils, as shown in the engraving. Not long ago M. Cassimir De Candolle published a paper in which he endeavored to show that leaves are modified branches. Whether this view be accepted or not, it seems that both the flower cluster and the tendril are of like nature, and are both branches adapted to serve a particular purpose,—in the one case to bear fruit, and in the other to hold up and firmly support the vine by clinging with great strength to neighboring objects.

A Singular Freak of a Potato.

Several specimens have been sent us in which a new potato had formed within an old one, and by its expansion in growing, broken the potato apart. It is either the case that the potato has deeply seated, dormant eyes, or that it possesses the power under favoring circumstances of forming buds where none previously existed. Dr. Hexamer has found that potatoes which were pared and every visible trace of eyes removed, would sometimes produce shoots and tubers. We present an engraving of a remarkable instance of the abnormal growth of which we have spoken.



ABNORMAL POTATO.

The specimen as it came from Mr. Wm. Langley, Garland, Pa., was a partially cracked tuber with a small one just forcing its way out of the fissure. Upon breaking open this old tuber we found within a distorted mass of branches, upon which several small tubers were

forming, as shown in the reduced figure. Upon all the specimens of this singular growth that we have seen, the outer surface of the old tuber was dry and hard, and it is probable that when the bud or eye started into growth it found less resistance towards the center of the potato than it did in pushing towards the circumference.

Protecting Trees in Winter.

In the colder portions of the country it is impossible to raise some of the finer fruits unless the trees be protected during the winter. Even in more temperate localities it is necessary to protect some trees, especially evergreens, during the first few years of their growth. If Red Cedar boughs can be readily obtained, a sufficient protection can be afforded by tying a number of these among the branches of the tree. A plan for the protection of small trees is sent us by Mr. Martin Howk, Cedar Co., Iowa, which he finds to answer well for dwarf trees in gardens. Those who will take the pains can, by root pruning and proper pinching, keep dwarf pear and apple trees quite small in size, and with a covering of the kind suggested succeed with varieties, which, without these aids, would be sure to fail. Mr. H. describes his protector as follows: "Bring the limbs of the tree together and bind them so as to occupy as little space as possible. Drive four stakes into the ground at proper distances apart, and saw the tops off even a little higher than the tree. Take a board about one foot square and drive a nail down through each corner into the top of the stakes, put a board around the bottom 15 or 20 inches high, and nail a few strips to the stakes at equal

distances apart, the upper one 2 or 3 inches below the cap board. Take long grass or straw, and double it over the lower strip, letting the ends hang outside the bottom board; put some

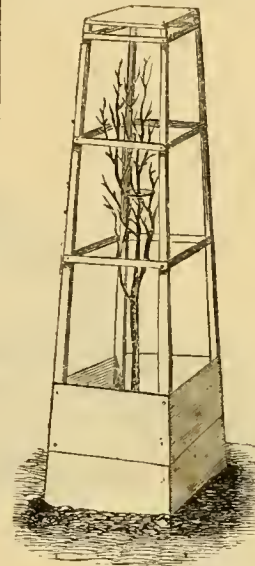


Fig. 1. TREE PROTECTOR.



Fig. 2.

on the second strip, letting the ends hang outside of the first, similar to a thatched roof, and continue the process to the top. To prevent the wind from displacing the grass, wind a strong cord around, taking an extra turn around each corner stake, or pass two cords through the grass in the same manner that a shoemaker sews with two waxed ends. Bank up with manure around the bottom board and place a few forkfuls inside around the tree. Figure 1 shows the tree with the frame ready for the grass, and fig. 2 the end of bottom board, strips, and cap, with the manner of placing the grass.

Notes on Lilies—Brown's Lily and Others.

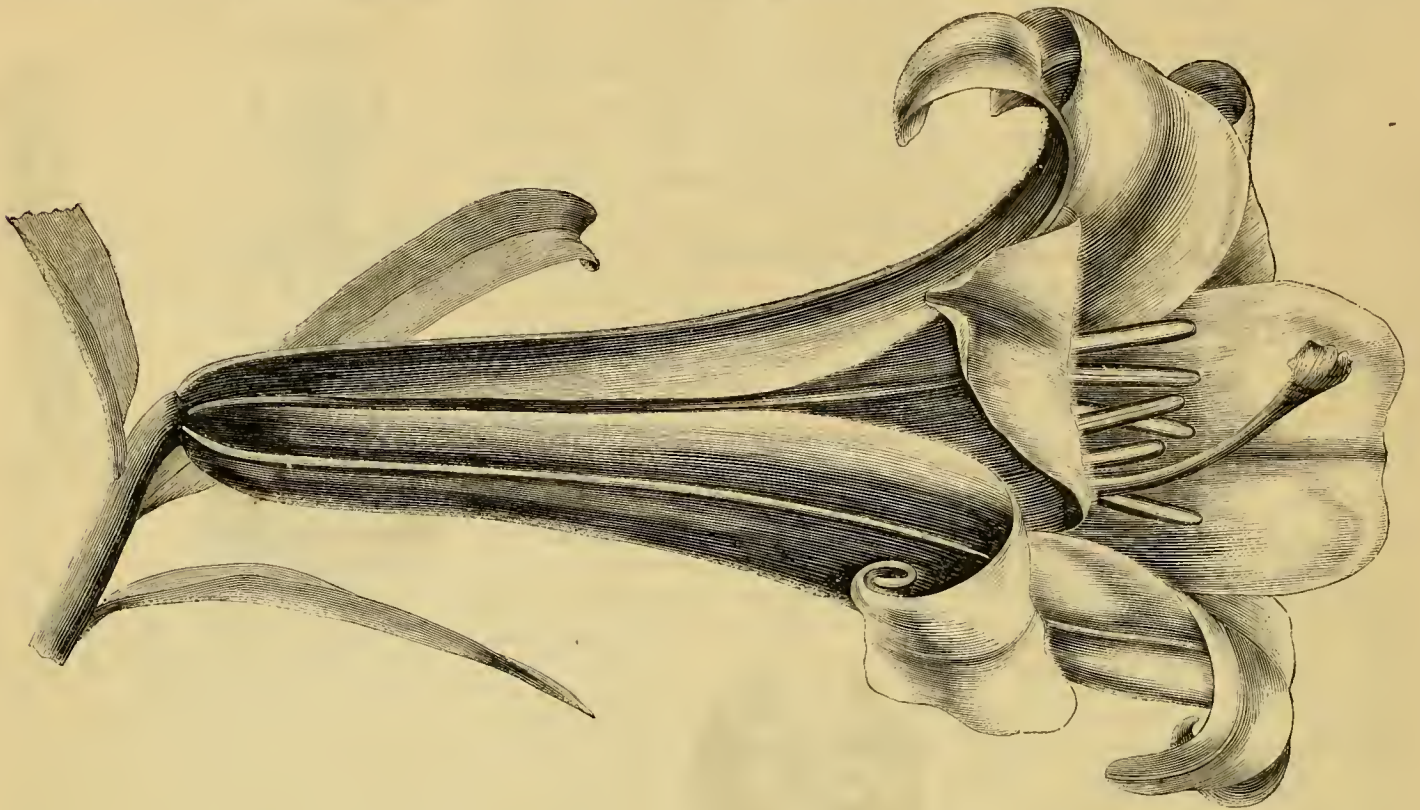
Do our readers think we are partial to Lilies? We admit it. Having received so much pleasure from our bed of these beautiful plants, we are disposed to write about them until we make the finer kinds as popular as the old Tiger and Turks-caps are in country gardens. This time, however, we shall allow another ardent lover of Lilies, Mr. James Vick, of Rochester, N. Y., to speak for us. Mr. V. has sent abundant specimens of flowers, which show his successful cultivation. The notes are on some of the less common kinds, which we hope to see in a few years as abundant and as easily obtained as are the common Japan Lilies. Mr. Vick says:

"The Golden-banded Lily, *Lilium auratum*, is one of the earliest Lilies to flower, and also one of the latest. About the first of July the first buds opened, and to-day, Sept. 1st, I have hundreds in full bloom, with almost ripened seeds, perfect flowers, and half-formed buds, in the same row. For some years I thought this was due to the fact that the bulbs were imported, some of them being dried or otherwise injured or retarded on the passage from Japan. This idea I have abandoned, as several hundred that have been in my grounds for three years show the same habit. What a glorious thing it is that with a dozen or so of bulbs we can have this Lily in flower all through the summer! For several years, indeed from its first importation, this Lily has been unhealthy and consequently unreliable, imported bulbs often, in fact generally, rotting after making a feeble growth and producing one or two flowers. This has been

the case in Europe as well as in this country. For the purpose of obtaining a healthy stock, I have obtained the Auratum from England,

Longiflorum every one likes. That beautiful, snowy-white, trumpet-formed flower will always be a favorite. Eximium and Takesima are im-

tinct sort. It is of medium size, blanches readily, is exceedingly tender and crisp, and of most excellent flavor. Besides the large cen-



BROWN'S LILY.—(*Lilium Brownii*.)

France, Prussia, and Holland, but they exhibited the same disease or want of vitality, as those imported directly from Japan. In the spring of 1867 I set out over 500 bulbs which arrived the previous winter, and in the fall had but one sound bulb. As I had advertised the Auratum that autumn, I endeavored to find a stock of sound bulbs around New York and elsewhere, and while I saw many florists who declared they had plenty of Auratums, an examination proved they were as bad as my own. In 1868 I saved about one-half, and the present year nearly every one is sound, making a strong and vigorous growth, quite surpassing *L. speciosum* in strength and height, with many specimens bearing a dozen or more of its mammoth flowers. The Auratum is best pleased with a rather sandy soil, and I have always found that manures of all kinds were of great injury to the bulbs, especially if they were in the least faulty at the time of planting.

If Auratum is the King, *Brownii* is the Queen of the Lilies—the most beautiful and gorgeous of the trumpet-formed section. The engraving was designed to represent a medium-sized flower, the drawing being made from a specimen I gathered for the purpose. It gives a very good idea of the size and form, and I will endeavor to describe the color. The bud is a dark brownish purple, and the outside of the petals is of this color when the flower first opens. The inside of the petals is clear white. The contrast is grand. As the flower grows older the outside becomes much lighter. *Brownii* seldom attains more than two feet in height, though I have seen specimens nearly or quite three feet. There are from three to six flowers on each stem.

The Excelsum Lily has always been a great favorite with me. It grows four feet or more in height, bearing at its very top an immense cluster of flowers, of a beautiful, rich, creamy, buff color, and delightfully fragrant. I think a few specimens were forwarded you last season.

provements upon Longiflorum, the flowers being longer and the petals more reflexed, but the old kind is still eminently worthy of culture."



Boston Market Celery.

Boston has long been celebrated for the superior quality of its celery, and the variety generally cultivated in the vicinity of that city is known as Boston Market Celery. As we find no account of the origin of this variety, we presume that it is the result of a careful selection; at all events it is a most excellent and dis-

trict head, numerous strong side shoots are thrown up, which, in large specimens, often become as large as the main heads of the dwarf varieties. The engraving is taken from a specimen raised by Josiah Crosby, of Arlington, Mass. It will be seen, by referring to page 365, last month, that this excellent variety is with other choice seeds placed on our premium list.

THE AUSTRALIAN GLORY PEA.—In the issue for September last an engraving of this splendid ornament of the flower garden was given, with an account of its treatment, by a friend who has been very successful with it. Since then Mr. John Saul, the experienced florist of Washington, D. C., has informed us that he raises it with perfect success in the open air. He waits until the ground is well warmed—perhaps the last of May—and then sows the seed in not over-rich soil, in the place where the plants are to stand. It will not bear transplanting. The plant is a particular favorite of the red spider, and it should be watched, especially in dry weather, in order to guard against this troublesome insect. Several have asked where seeds of the Glory Pea can be obtained; they are kept by all our principal seedsmen.

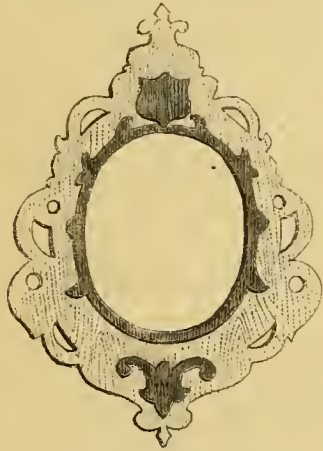
THE CURCULIO.—Mr. Charles Arnold, of Paris, Ontario, stated at the recent meeting of the American Pomological Society that after trying shaking the trees and other methods for destroying the curculio, he had hit upon the expedient of whitewashing the soil. He pours the whitewash from a watering-pot, and spreads it with a brush so as to completely cover the surface. This, of course, needs a firm and compact surface, clear of weeds. Mr. A. states that the larva or maggot of the curculio will not leave the fallen plum to enter the ground, but will die there rather than pass through the whitewash. This is simple and worthy of a trial.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Whittling for Boys.

A boy's outfit is not complete unless he has a jackknife, and, being possessed of this article, he often uses it in such a manner as to do mischief and annoy others. It is worth while to turn this propensity to whittle to good account, as working with an object in view is of much greater interest to the boy than an unmeaning making of chips. In June last we gave designs for a lamp-bracket, which can readily be made by the older boys. A very good thing for the younger ones to try their hands at is a simple frame for a small photograph or other picture. A correspondent, whose name has been mislaid, has sent a tasteful design, which we give in the engraving. The outline of this, if neatly cut out from a piece of cigar box or other thin wood, will make a neat little frame. It may be made more elaborate by the addition shown by the dark portion of the engraving. This may be cut from black walnut, or some very white wood, either of which would afford a marked contrast of color and add much to the effect, and glued on. The frame may be made of any convenient size. The pattern should be first made of paper, taking care to get both sides exactly alike; and then by laying this upon the wood the form may be drawn with a pencil, or the paper can be pasted upon the wood,



PICTURE FRAME.

from which it can be readily removed by slightly moistening it. The boys should be taught to make square and neat edges. Rounded edges are frequently made in order to cover up slovenly work.

A Handy Kitchen Implement.

At the furnishing stores are sold small brooms made of fine twigs, very much like a miniature birch broom without a handle. These are useful in scrubbing the insides of pots and kettles, and are capital things to use in keeping the sink clean. The engraving shows the form in which they are made. The article as sold is about eight inches long. A similar one can be readily made of small



SCRUBBING BRUSH.

twigs of birch, or other strong and elastic spray. The handle is securely bound with twine or withes.

A Cruet Stopper Fast.

A lady in Grimes Co., Texas, has a vinegar cruet of which the stopper is broken off even with the neck. As she cannot readily match the cruet, she wishes to remove the stopper. It is a rather diffi-

cult case, as there is no projection by which to take hold of it. We have in similar cases succeeded by putting the bottle into a vessel of cold water and gradually heating it. The cruet must be prevented from touching the bottom of the vessel, by a bit of thin board, or in some other convenient way. The air within the cruet will be expanded by heat, and will frequently throw the stopper out, but it sometimes results in breaking the bottle. If any vinegar has dried around the stopper and thus cemented it in, it will be well to dissolve it by soaking in water for a while before trying the heating.

Sour Cream, Sour Milk, and Buttermilk.

BY A HOUSEKEEPER.

There is no end to the nice articles of food that may be made by using sour cream, sour milk, and buttermilk, in a judicious way. There are several things in their use about which care should be taken. 1st. Cream that is to be used in cooking should be wholly separated from the milk. 2d. It should be thoroughly soured. 3d. If in any recipe milk or buttermilk is to be employed with the cream, it should also be entirely sour, as the mixture of sweet and sour milk, or cream, tends to make the article heavy. 4th. The amount of soda or saleratus should only be just enough to sweeten and lighten the cream, as any more than this imparts the green color and soapy flavor which are so disagreeable and unwholesome in articles of food.

When once a recipe is found to be good, no changes should be made, as the chances are ten to one that the experimenter will have a failure and lay the blame upon the use of cream instead of her own carelessness or ignorance. I annex a few recipes which have been well tried and proved, and are thought by all my friends who have made use of them to be among their best recipes.

BUTTERMILK MUFFINS.—1 quart of sour buttermilk, 1 teacupful of sour cream, 2 eggs, 1 teaspoonful of soda, a little salt, flour enough to make as thick as pound cake. Bake in muffin rings placed upon tins in the oven, from 20 to 30 minutes, according to the temperature of the stove.

BUTTERMILK GRIDDLE CAKES.—1 quart of sour buttermilk, a little salt, 1 teaspoonful of soda, and flour enough to make the cakes as thick or thin as you like them. Bake upon a griddle.

CORN BREAD OR CAKE.—1 quart of sour milk or buttermilk, 4 eggs, 2 tablespoonfuls of sugar or molasses, 1 teaspoonful of soda, 1 pint of corn meal. 2 tablespoonfuls of sour cream may be added, though it is good without. Bake about one hour.

MOLASSES CAKE.—1 teacupful of molasses, 1 teacupful of sour cream, 1 teaspoonful of soda, $\frac{1}{2}$ teacupful of ginger, a little salt; stir in flour enough to make a very stiff batter.

CREAM CAKE.—1 teacupful of cream, 1 teacupful of sugar, 1 egg, 1 teaspoonful of soda dissolved in $\frac{1}{2}$ teacupful of buttermilk, a little salt, 2 teacupfuls of flour, spice to your taste.

Cream of Tartar.

"W. L. A." asks about Cream of Tartar. As this is an article largely consumed in the kitchen, the reply will properly come in the Household Department. The juice of the grape contains besides sugar, a considerable amount of a salt which chemists call bitartrate of potash, which is in solution in the sugary juice of the grape. When the grape juice, or must, begins to ferment, and is converted into wine by a change of the sugar into alcohol, the bitartrate of potash, being little soluble in water and still less so in a liquid containing alcohol, is deposited upon the sides of the cask, which it encrusts, and from which it is at length removed. It is known in this state as Crude Tartar, or Argol, and is more or less colored, according to the kind of wine from which it is deposited. The crude tartar is purified by dissolving it in boiling water. A small quantity of pipe clay is added to remove the coloring matter, and when the solution cools, white crystals are de-

posited, which are called Crystals of Tartar, and these, when ground, are the Cream of Tartar. Cream of Tartar, then, is a natural product of the grape, from which the impurities have been removed. The composition of Cream of Tartar is 132 parts by weight of tartaric acid, 47.2 of potash, and 9 of water. It is what is called an acid salt. It is not easy to explain the composition of substances to those not familiar with chemistry. The neutral tartrate of potash consists of one equivalent of tartaric acid and one of potash—by weight 66 of the one and 47.2 of the other. Cream of Tartar is the acid tartrate or bitartrate, and has twice as much, or one equivalent more of tartaric acid than the neutral tartrate, and is a convenient form in which to use tartaric acid. Much of the Cream of Tartar sold at the cheap stores is adulterated, the common additions being alum, ground plaster, and flour. The last named is detected by its forming a paste with water; the plaster does not perceptibly dissolve in hot water. Alum can be less readily detected.

The Table—Order and Ornament.

The writer of these articles had no idea that they would bring out such an amount of correspondence as they have done. Some of the letters express thanks for the hints that have been given for table arrangement, and others propound questions. Many things are asked which, to a good share of our readers, may seem somewhat singular, but they must recollect that customs which they have followed all their lives are strange and new to many who live in isolated places where changes take place but slowly. We welcome these as we do other inquiries, as an indication of the wants of our readers, and the more we have of them, the better. One asks: "Is it proper in laying the table to place the plates bottom side up?"—It is much better to place the plates right side up; the table looks neater, and one is not subjected to the inconvenience of turning them over. . . . "Which side should the servant go in serving the guests?"—Where the table is waited upon, the waiter should present everything at the left-hand side of the person served, except water. The glass being at the right hand of the person at the table, is usually filled where it stands. . . . "How shall guests be placed at the table?"—This was sufficiently discussed in April last. . . . "Is it proper to talk at the table?"—By all means. We are aware that some few consider it proper to observe perfect silence while at table. We do not know how such a horrible custom originated, yet we have a few times been a guest at such tables, but hope never to be again. The table is just the very place to talk, and the meal hours should be among the pleasantest of the day. Don't talk business and discuss what work shall be done after dinner, but give the time to social chat. This should not prolong the meal inconveniently, but there should be enough of it to prevent the too common custom of rapid eating. The table is a capital place to teach children to be good listeners; no small part of a child's education is acquired in listening to the table talk of its seniors, and this is a hint as to what the character of the conversation should be. Talk? Yes, and laugh too, and the meal will be all the better digested. . . . "Is it courteous to leave the table when one is done, if the rest are still eating?"—Decidedly not, unless there are some urgent reasons for it, and then an apology should be made to the lady of the house. Children should always ask leave to absent themselves. . . . "How should we spend the time while waiting for those who are still eating?"—A person of tact will not finish the meal before the rest, but should it so happen it must be an exceedingly uninteresting company which would make it irksome to wait until all are through. The signal for rising is usually given by the lady of the house. . . . "Should we leave the plate clean, or partly filled?"—It is a great piece of affectation to leave a portion of the food intentionally. Where one is overhelped, it is sometimes unavoidable. Many in carving and serving food seem to think it a mark of hospitality to give a bountiful supply, and we often see the plate

loaded with more than can possibly be eaten, and some must be left, as the human stomach has a limited capacity. Those who carve should serve judiciously, and if more is wanted, the guest should not hesitate to express his wishes. It is a matter of great astonishment to Europeans, to see the quantity of food left unconsumed upon the plates. They say, and truly, that an American family wastes as much as will support a French family of the same size. A large part of this waste comes from overloading the plates, and another from the foolish notion that it is "polite" to leave some unconsumed food upon the plate. On the other hand, it is not well to be over-scrupulous about leaving the plate perfectly clean. We have seen persons scrape away at the plate until it was in the condition of Mr. and Mrs. Jack Spratt's platter. In this, as in other matters, it is well to avoid extremes.

Baby Clothes.

BY FAITH ROCHESTER.

There is no tyrant more oppressive in his exactions than Fashion. The time must surely come when women will rise in general rebellion against this shameful tyranny, but at present not one woman in a hundred is aware of her bondage. In the meantime, let me offer a pleading word for the innocent babes who are enslaved by Fashion as her victims. One might suppose that common sense and maternal love combined would protect the helpless infants from all abuses, but they do not. When a young mother sets to work to prepare the precious "fig-leaves" that are to clothe her expected darling, she ought seriously to consider and aim to supply the real needs of the tender little animal,—for divine as is the soul of each human infant, we must own that at birth there is only the animal part of it which we can deal with directly. There may be no lack of love on the mother's part, but there is often great lack of knowledge and forethought. She does as her friends do, or consults the fashions for baby garments. These are not so changing as the fashions for women and misses, and are not so freely published, but baby clothes are pretty much all alike in general style of making up. It would seem reasonable that the little body should be dressed so as to afford an equal warmth and circulation as possible, but usually the lower limbs are warmly wrapped in flannel while the arms and shoulders are left bare, except as a loose blanket is folded about them, restraining motion and constantly liable to disarrangement. In cold weather more sensible mothers put a long-sleeved flannel sack over the short-sleeved dress, but the sleeves of this added garment are often so short and loose as to afford little warmth below the elbow. Of late, the bands worn during the first few months of infancy are usually made of flannel,—a great improvement on the old-fashioned double-linen bands. Ordinarily these bands are worse than useless after the first month, but in cases of weakness, when they seem to be necessary on older infants, great care should be taken to have them fit easily, yet be so securely fastened as to retain their proper position. These bands never fit the body unless there are two small gores, from two to three inches apart, at the lower edge of each where it comes down below the bowels. If worn after the babe is six weeks old, when it begins to move about some, a bit of tape should be sewed between these gores to reach down and be held firmly in place by the diaper pin. This prevents slipping up. Shoulder-straps of inch-wide tape will prevent slipping down. Made thus, and pinned very carefully, that there may be no suffering from sticking pins, the band may be fastened so loosely as not to impede respiration or freedom of motion, and yet form a safe protection from injury by severe crying or straining. Instead of the ordinary short-sleeved linen shirt and the flannel petticoat with its straight waist of cotton or linen, let us put next over the properly constructed band, a long flannel sack, made with gores under the arms and in the back, fitting the waist quite loosely, and going out below into convenient dimensions for a skirt. This

sack, made of soft flannel, and with long, straight sleeves, and fastened in front with small, thin buttons, is surely a much more comfortable garment for the helpless baby than the close waists and folds and gathers of its ordinary underclothes. Every invalid knows the luxury of loose wrappers for lying down, and this poor baby is fit for no other position during the first four or six weeks of its life. Over this, a dress or simple slip may be worn, long-sleeved, of course, and reasonably high in the neck. A soft, thin blanket is useful, especially to protect the hands and head when the little one is carried about.... "But their little bare arms and shoulders look so cunning!" one mother tells me. Oh, mother! I know not how to answer you. Nothing can be more cunning than their dear little feet. Shall we dress them so as to leave these exposed? You let your three-year-old Freddie go with bare knees and thinly clad ankles in cold autumn and spring weather, because you think that fashion for dressing little boys "so cunning!" Your eyes find pleasure in the exposed shoulders and arms of your grown-up daughter in evening dress, at all seasons of the year. I see Freddie shiver, and observe the growing pallor of his complexion, and I hear the cough of your daughter, and a vision of coffins and churchyards comes between me and them. Farmers understand that the health and growth of their little pigs and calves depend much on their being kept warm. The same law applies to all young animals, including human babies. But infants, like grown people, should be clothed in accordance with the weather. In a sweltering summer day, why need the little thing wear clothes at all, if not exposed to society? Let it lie, for a little while at least, entirely naked, and kick to its heart's content, and when dressed let its garments be light and thin; but as the weather changes, be quick to add more clothing. To wear more and warmer clothing than the body needs, is weakening. There are children who go barefooted and half-clad all winter, and live in dirty, unventilated garrets or cabins, and yet grow up to be as healthy as the average of men and women. So there are apple trees that live and grow and bear fruit under the most unfavorable circumstances, but no man of sense concludes that therefore it makes no difference whether fruit trees are cultivated and cared for or not. The fussiness of ignorance has destroyed many little babes, but this fact is no argument against intelligent care and judicious cultivation.

How to Cook Dried Beef.

BY CARRIE CARTER.

I usually prepare at night what I am going to cook for breakfast. When I lived at home before I was married, I used to think when we had dried beef cooked, that it was the least inviting of anything; since then I have changed my mind, and I attribute the change to the different manner in which it is cooked. Instead of boiling it in water, as many do, I cook it as follows: Place the beef, nicely shaved off, in a frying-pan, with butter enough to fry it, let it fry until a little browned, then sprinkle in *dry* flour, as much as you would take were you going to mix it with water; let it brown, but take great care not to burn it. When browned sufficiently, add cream or milk enough to make a gravy; let it boil a few moments, add a little butter and pepper, and it is done. I very frequently boil eggs and cut them up lengthwise, and lay them around on the meat after it is poured into the platter. This makes a very pretty and very palatable dish, and with some nice mashed potato, and sweet potatoes, and tomatoes with sugar, and just a *trifle* of vinegar poured over them, I think we have a very good breakfast; sometimes I make a dish of toast, too, but I find when we have sweet potatoes that we do not use so much flour as without. I think as we cannot procure the variety which cities afford, we should take as much pains as we can conveniently with our food. Another way I cook dried beef is to cut up a sausage in slices and fry until there is enough fat tried out to

fry the meat; then put in the beef and proceed just as for frying in butter, using water instead of milk or cream for the gravy. This gives an excellent flavor unless sausage is disliked.

Various Ways of Preparing Cabbage.

BY MRS. M. L. GAOE, ROSS CO., O.

In this part of the country there is a great deal of cabbage used, but it is very seldom boiled whole. It is cut as for cole-slaw and cooked in various ways, and is more delicate, and the odor of boiled cabbage is wholly avoided. In cooking, use a very little water and salt, cook a few minutes, add butter or meat fryings, or, better still, a cup of cream added just before it is done. Some add vinegar, and let it boil up once.

The nicest way I ever saw cabbage cooked is as follows: The cabbage is cut as for cole-slaw, an egg is beaten up with a little sweet cream and a little sugar in a separate dish; the amount of vinegar you wish to use is at hand in another dish. Every thing being ready, drop a little piece of butter into the pot over a good fire; do not let it fry, or it will discolor the cabbage, but add immediately the cream preparation and the vinegar, and stir until just ready to boil, and then empty in the cabbage and stir on, letting it boil one minute or five minutes according to taste. This is to eat warm, but is good cold, though not so nice as the following. Cut the cabbage and lay in a dish as before. Take the amount of vinegar necessary, a little sugar, and a little butter; as soon as this boils pour it over the cabbage, and set it away to cool. It is impossible to give a precise rule, as cabbages differ so much in compactness, and vinegar varies in sourness. These preparations are all good for lettuce; and the one with cream, egg, and vinegar, leaving out the sugar, is excellent for mashed potatoes in the spring, when that vegetable is not always of good quality and the appetite craves something decided.

Hints on Cooking, etc.

Potato Fritters.—Take five or six large, mealy potatoes (peachblows are the best), and slice them lengthwise, about one-fifth of an inch in thickness, throwing the slices into cold water as they are cut. Have ready a deep griddle on the fire in which some lard or nice drippings have been melted; lay the slices in separately, and sprinkle them with salt. Fry them to a nice brown on one side; then turn and brown the other. Try them with a fork, and as soon as one piece is thoroughly done, dip it in batter and return it to the griddle. By the time the last piece is dipped, the first will need turning. As soon as the fritters are browned on both sides, lay them on a heated dish and put more on the griddle. They need constant attention, to keep them from becoming too crisp or burned. Half a teaspoonful of sweet milk, one egg, a little salt, and flour enough to make it of the consistency of pound-cake, is a good recipe for the batter. Apples sliced and cooked in the same manner and eaten with sugar make a good dessert.—The above was communicated by Mrs. P. J. Van Winkle.

Pudding Sauce.—A. Lizzie Knehn sends the following: One quart of boiling water, 4 large tablespoonfuls of white or light brown sugar, 2 do. of flour, 1 do. of butter, 1 teaspoonful of salt, nutmeg or cinnamon to taste. Two tablespoonfuls of currant or blackberry wine are a great improvement. Boil the whole together for 10 minutes. "A. H." sends a similar recipe. Though neither writer mentions it, it is necessary to mix the flour with a portion of cold water before adding it to the boiling water.

Ginger-snaps.—By "A. L. K." One pint of baking molasses, 1 lb. of sugar, $\frac{1}{2}$ lb. of lard, $\frac{1}{2}$ oz. ginger, and 1 tablespoonful of cinnamon. Work the lard, molasses, and sugar, together, and add flour enough to make a stiff dough. Roll out thin, cut with a round cake-cutter, and bake quickly.

BOYS & GIRLS' COLUMNS.

The Doctor's Talks—About Making a Fire.

Two ways of making a fire have been described, and in both of these some force to produce motion was used. You will recollect that the Indian had to rub very hard. Our ancestors, who used the flint and steel, made a fire only by hard knocks, but this was a great improvement upon the method of the savage. The next step in advance, so far as I know, was an arrangement for procuring fire by chemical means. It is a little difficult to explain to boys and girls exactly what is meant by chemical means. You will doubtless learn more about it when you get older—at least you will if you take my advice. It will be sufficient now to say that widely different substances unite or act upon one another, and that this union or action is often attended by the production of heat. I am afraid that the statement is not very clear, but it would take too long to make it any plainer. Chemists found out that if a mixture of a substance called Chlorate of Potash and loaf sugar, both in fine powder, was touched with a drop of Oil of Vitriol (sulphuric acid) it would burst into a flame. This knowledge was turned to account in furnishing a means of getting a fire. When I was a boy the arrangement shown in figure 1 was quite frequently used, though its cost prevented it from generally taking the place of the flint and steel. The engraving represents a sort of two-story box. *A* is the cover, *b*, the portion containing the matches, the lower part of which served as a cover to *c*, the bottom part, which held a little bottle. In the engraving the parts are shown separately, but you can readily see how it would go together and make a neat, long box. The figure is only half the real size. The matches were first dipped in melted sulphur, and then tipped with the mixture before spoken of, viz.: Chlorate of Potash and loaf sugar, mixed with just enough of gum water to make it stick. You have probably already guessed that the bottle at the bottom held Oil of Vitriol—which was the case; but as this is a very dangerous and destructive substance if it falls upon one's skin or clothing, it was very ingeniously prevented from spilling. The bottle was filled with *Asbestos*, which is a curious mineral, found in fine, silky threads, and which the Oil of Vitriol cannot destroy. The *Asbestos* was moistened with the Oil of Vitriol, which was prevented from spilling, and yet there was enough of it in the bottle to answer its purpose, which was, of course, to set fire to



Fig. 1.

ash and loaf sugar, mixed with just enough of gum water to make it stick. You have probably already guessed that the bottle at the bottom held Oil of Vitriol—which was the case; but as this is a very dangerous and destructive substance if it falls upon one's skin or clothing, it was very ingeniously prevented from spilling. The bottle was filled with *Asbestos*, which is a curious mineral, found in fine, silky threads, and which the Oil of Vitriol cannot destroy. The *Asbestos* was moistened with the Oil of Vitriol, which was prevented from spilling, and yet there was enough of it in the bottle to answer its purpose, which was, of course, to set fire to

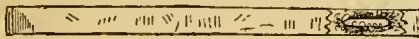


Fig. 2.—CHLORATE MATCH.

the mixture on the end of the match. This is the way fire was made by this contrivance—one of the matches had its prepared end thrust into the bottle and suddenly withdrawn. Enough Oil of Vitriol would touch the mixture to set it on fire, this would set the sulphur on fire, which, in turn, would light the wood of the match. There were several inconveniences attending the use of this fire-making contrivance, but as it is now among the things of the past, they are of no consequence. About the same time that the match box we have described was in use, there was another way of using the same materials. It was still more expensive, and was to be seen more as a curiosity than as an article of every-day use, but I mention it to show how hard people tried to find some easy means of making a fire. Figure 2 represents the match, if I may so call it; I have forgotten what name it went by. A strip of paper was folded two or three times, and at one end was a small quantity of the powdered Chlorate of Potash and loaf sugar, and in its midst

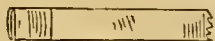


Fig. 3.—LUCIFER.



Fig. 4.—SANDPAPER.

a very small glass tube, about half an inch long, which was sealed at each end, and contained a drop of Oil of Vitriol. These, which are shown by a removal of a part of the paper, were secured by pasting so that they could not get out of place. To get a fire with this match it only had to be laid upon a table and struck with some hard substance to break the thin glass tube. The instant the Oil of Vitriol touched the powder, it burst into flame

with a *fizz*, lighted the paper, and then we had a fire made in an ingenious but rather roundabout way.

The next step in matches was the "Lucifers." These were made of thin, flat slices of wood, which were tipped with a mixture of Chlorate of Potash and a mineral called Sulphuret of Antimony, made into a paste with gum water. Here we have more of the work of the chemists in helping people to make a fire. It was discovered that a mixture of the two articles we have named could be set on fire—not by touching with Oil of

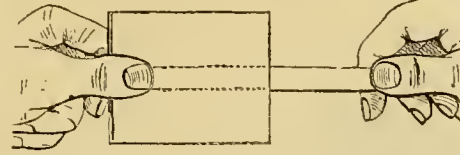


Fig. 5.—MANNER OF LIGHTING A LUCIFER.

Vitriol, as in the case of the matches just described, but by rubbing, or by a smart blow. The Lucifers were put up in small boxes, each furnished with a piece of folded sandpaper. The match and paper are shown in figs. 3 and 4, and the manner of using them in fig. 5. The match was placed in the fold of the paper, which was held with a moderate pressure by the thumb and finger of one hand, and the match briskly pulled out by the other hand. The Lucifers were a great improvement upon all the fire-making inventions that had gone before, and were for a long time in general use, but now other and better kinds have taken their place. Though they gave fire instantaneously, they were not altogether pleasant to use. The match would explode while being drawn through the sandpaper if held too tightly, and careless people frequently had their fingers burned.

Gophers.

A Western paper states that a boy in Iowa has caught over seven hundred gophers within two months. He receives a bounty of ten cents a scalp from the farmers, ten cents from the County, and ten cents each for the hides—not a bad spring's job for the lad. But what are these *gophers*? asks an Eastern boy. They are sometimes called the Prairie Squirrel, and are about the size of the familiarly known squirrel. They abound in our Western, Southern, and Pacific States, and particularly infest the rich farms of Missouri, Illinois, and Iowa. They burrow like moles, sleep during the day, and prowl about for their food at night, eating the roots of trees and shrubs, and feasting, to the great disgust of farmers, upon melon patches and garden vegetables. On this account the large bounty is offered to the trappers, who catch them while engaged in their nocturnal raids. In Florida and other Southern States, there is a tortoise that is also called a *gopher*. He has nearly the same habits, but is larger. He borrows in sandy plains and upon pine barrens, basks in the sun through the day, and then strikes at night for the sweet potato fields and the garden melons. These animals have their use, undoubtedly; the eggs and flesh of the latter are esteemed as wholesome food, and the fur and skin of the former are made to do good service, but still, they have so little consideration for other people's property, that their absence is rather sought for than their presence.

Learn to Observe.

Most young people have great respect for men of science, and are apt to think that it is impossible that they can ever know as much as Doctor or Professor so and so. All the persons whose great knowledge you wonder at were once as ignorant as any boy or girl who reads this. If any of you desire to become learned about natural things,—the rocks, trees, animals, and the like,—you must in the first place learn to use your eyes, or make observations, as it is called. One of the most celebrated naturalists once said to us in speaking of some of his important discoveries, "All I had to do was to look and see the thing just as it was made." Of course one, to make new discoveries, must know what has been done before, and that can only be learned from books which record what other people have done. Every boy and girl should learn to observe and note down what he or she sees. Keeping a record of the thermometer will do much to fix a habit of accuracy and regularity. Note the first appearance of snow, the number of the snow-falls and their depth. The first appearance of the blue-birds and wrens, the blossoming of the Red Maple, Dogwood, and other early trees and shrubs, should be recorded each year. These show the comparative earliness of spring,—and how

interesting it would be to look over the notes of many years! Those who begin by carefully observing these common things will soon wish to know something more about them. It is a beautiful thing about the study of nature in any form, that the knowledge we obtain not only prepares us for receiving more, but it gives us the desire to learn more. The fountain is inexhaustible.

Answers to Problems and Puzzles.

By some oversight we have for a few months omitted to give the answers, and now include those published in August, September, and October. —August. Conundrum 352—Silence. 353—They are pitchers, tumblers, and flippers. 354—One has a little brood (brewed), and the other has a little Bruin (brewing). 355—If reversed, will show where the wood-demons are. —September. 356—Father and son had married mother and daughter. 357—One is catching (ketching) and the other is sketching it. 358—Think over what you hear and learn to be wise. (Tea-II in K over W-hat-cwo-II-car-and-L-urn-2-bee-Ys).—October. 359—Heroine. Hero, Her, He. 360—Good-by. Guinea has six letters, one of which, 1-6th, is g, and so on through ounce, rod, etc. 362—Watch over your heart. Therein let not deceit be found. (Watch over ewer-heart. T-hare in let-knot-D-seat-beef-bound.)

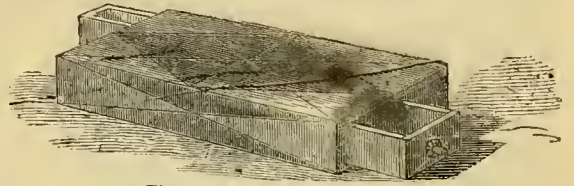


Fig. 1.—JAPANESE BOX COMPLETE.

A Curious Japanese Box.

We give here engravings of a very ingenious box (fig. 1) which contains two drawers, one at each end. When either of these drawers is pulled out or closed, the other follows its motions and opens and shuts too. In figure 2 the box is shown opened from the bottom, and the parts laid in a manner to show the arrangement. *A* and *b* are the two drawers resting upon the case. The case or box has a partition running lengthwise, and at each end of the partition there is a notch through which a cord runs. At *c*, in the drawer *a*, a cord starts through a hole,

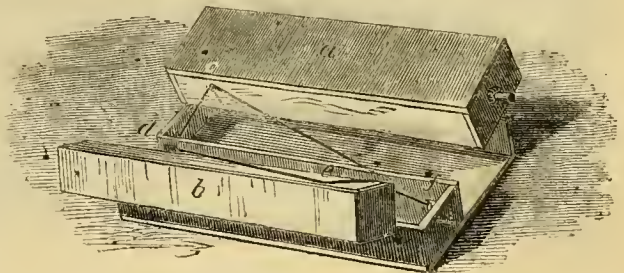


Fig. 2.—BOX LAID OPEN.

which has a knot at its end to keep it from coming through. It goes through the notch in the partition at *d*, it then runs to *e* in the box *b*, where it passes through a hole and is secured by a knot on the other side; it then passes through a notch in the partition at *f*, and back to the starting-place *c*, where it goes through a hole and has a knot made in the end upon the inside of the drawer. The notches in the partition are lined with a bit of smooth ratan, to prevent wearing out the string.



No. 363. Picture Puzzle. By removing the insects the remaining articles can be made to read and speak.



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A SHORT CUT FOR HOME.—FROM A SKETCH BY E. JUMP.—Drawn and Engraved for the American Agriculturist.

The miner has been to the nearest settlement. It was a long and weary journey, and as he knows a short cut over the mountains, he thinks that as it is a bright night he will try the more rugged but nearer route. He does not see as plainly as you do that there is a slight obstacle in the road—not a slight one either, for a grizzly bear in a narrow mountain path is just the reverse of slight. The grizzly is the largest and most ferocious of our bears, and is an animal which, unless one is well armed, and a good shot, had better be avoided, for when hungry or if angered it will attack man or beast. Although so savage, bears will not trouble a sleeping person, and hunters knowing this sometimes feign sleep when they cannot otherwise escape. The writer once traveled in California and New Mexico, where grizzlies were plenty, and though they were frequently in camp at night, no one was ever harmed. The cooks, who slept on the ground, usually put a bag of pork under their heads, which served as a pillow, and it was supposed to be safe from marauding animals. On more than one occasion a grizzly helped himself to the pork, but did not harm the men. An old fellow who lives in the Sierra Nevada mountains is well known to travelers. He lives alone, and has his excitement in fighting grizzlies and Indians. One day he was out hunting, and, seeing a young bear, he shot it. Before he could reload his rifle, the mother-bear, who was concealed by some bushes, was upon him. The hunter immediately dropped and remained as quiet as if he were dead; the old bear nosed around him a while, and finding that he did not stir, left him to look after her wounded cub. The hunter, after she had been gone a while, looked up to see if all was right. The bear saw the motion, and to use his rough way of describing what happened, "that ar bar came buck, and good gracious,

how she did *chaw!*"—The fellow escaped, though terribly cut to pieces. The picture is a very pretty one, and let us hope that no such fate is in store for our unconscious traveler. When we leave a well-known road and strike out into a new path in our journey of life, it is well to expect obstacles and be prepared to meet them.

Indoor Games.

Quiet amusements are often much more agreeable than boisterous, romping ones, and often it is very desirable for the comfort of other members of the family that the children should enjoy themselves quietly. Families in which quiet games and those requiring thought have been introduced, almost always take to them with great pleasure. A game called INITIATION may be played very quietly, but might produce boisterous merriment. It can only be well played when it is new to most of the party. It is supposed to represent the initiation of new members into some secret society. Those who know go into one room and all but the master of ceremonies stand in a row; the others are excluded, and introduced one at a time as new members. From the time one enters the room every motion he makes is imitated, and every word he speaks is repeated, until he discovers what the initiation consists in, and this is all. When one knows, another is introduced, and the former one joins the wise ones.

INITIAL WORDS.—Each one having a sheet of paper and pencil, a word is selected containing a good number of different vowels and consonants—the best words being those in which no letter is repeated. Each one writes down as many words beginning with the first letter of the word, as can be spelled with the remaining letters; none may be used twice in the same word. Thus the

word Merchant is selected, and each one writes as many good English words as he can, beginning with M, all the letters of which are found in Merchant. These are some of the words—meat, mean, meant, man, met, mat, match, mar, march, etc., etc. Three or five minutes are allowed in which to write them, the "time-keeper" calls "time," and then requests each one of the party to read off, one at a time, the words he has written. The others respond "I have it," if they have written the word, or "No," if they have it not, at the same time crossing out the word on their own sheets. So as each reads in turn he only reads those words which have not been already read. Finally, every word of one syllable not written by another counts 1 to the writer of it, every word of two syllables counts 2, every misspelt word or improper word discounts 1. The credits are set down, and the party proceed to the next letter, E, and write ear, eat, each, etc., etc.—proceeding and continuing as described. The game may be 20 or 50, or any number, and whoever gets that number of credit marks or "counts" first, beats.

Answers to Problems and Puzzles.

The following have sent correct answers: Geo. Maw, G. W. Clemmer, L. Jennie Hays, F. T. Seward (356, 358), W. F. Rowe (356, 358), Helen M. R. H., J. S. Bulkley, Nannie E. Shinn (353, 353, 358), M. Howk (353, 358), "Ruralist," Eddie and Elmer Moody, L. A. Duffield, "J. G. L.," H. C. Rood, Eva Gray, Mary Doughty, Fannie A. Darrah (356, 358), J. M. Snyder (358), J. Chase, J. K. Moran, Rosa L. Miller, M. Belle Rupert, L. E. Shriver, H. W. Kay, Mina M. Walker, Mary Dridge, J. Buzby, W. L. Jacobs, Wm. Reynolds, Jr., L. Martin, C. P. McAllister, Wm. S. Munger, E. Van Syckel, Jr., T. B. Luce, Will Worden, J. W. Young, J. M. Wylie, J. H. Bare (358), H. Tudor, Geo. C. Green, W. M. Carney.

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FOR 1870.

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is of the same size and general character as THE WEEKLY, but has space for a greater variety of miscellaneous reading, and furnishes the news to its subscribers with greater freshness, because it comes twice a week instead of once only. Its subscription is only TWO DOLLARS a year, the ordinary price of a New York weekly. This edition also contains the agricultural and miscellaneous matter prepared for THE WEEKLY.

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150 of the Choicest Varieties of Potatoes.

Some of them cost us last spring no less than fifty dollars a tuber. For 25 subscribers, with \$25, we will send 25 copies of WEEKLY for one year, and 25 named varieties of potatoes, including the newest and most costly kinds. For fifty dollars, 50 copies and 50 varieties. For one hundred dollars, 100 copies, and 100 varieties. These potatoes will be all labelled, carefully packed, and sent free, by mail or express. Of some kinds (the most costly) but one tuber will be given, of others more, and of others as many as one pound. A proportion of SEMI-WEEKLYS may be included in any of the above or following clubs, at \$2 a year, where desired. For the ladies we have grown

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- | | |
|---------------------------------------|--------------------------------------------|
| 1. Two Ellisdale Raspberry. | 15. Two Concord Grape Vines. |
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| 3. Two Philadelphia, do. | 17. One Delaware do. |
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| 7. Two Mammoth Cluster do. | 21. One Japan Lily, Roseum (Rose-colored). |
| 8. Two Monthly Black do. | 22. One Japan Lily, Album (White). |
| 9. Two Summit Yellow do. | 23. One Lilium Candidum (Fragrant White). |
| 10. One Sable Queen Black-berry. | 24. One Choice named variety of Gladiolus. |
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| 12. Two Kittatinny do. | |
| 13. Two Cherry Currants. | |
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For Clubs of One Hundred, we will send a first-class SINGER'S FAMILY SEWING MACHINE, of the new and popular make, on ornamental iron stand, black walnut table, with drawer (oiled), price \$50. This machine has a hemmer and braider, and is adapted for all kinds of work. It is unquestionably one of the very best in the market.

For Clubs of One Hundred and Fifty with \$150, we will send one of E. P. NEEDHAM & SON'S celebrated silver-tongued Parlor Organs, open register, four octaves; one set of reeds, with combination swell; oil finished black walnut case, with paneled front and brackets, and carpeted double-blowing pedals. Price \$89.

For Clubs of Two Hundred we will send one of the celebrated BUCKEYE MOWING MACHINES, complete, No. 2, 4 feet 1 inch cut, price \$125, from the famous manufactory of Adrance, Platt & Co., of this city.

For Clubs of Three Hundred we will send one of NEEDHAM & SON'S superb Parlor Organs, two stops—Diapason and Principal; four and a half octaves; two sets of reeds; with grand organ foot-stop and combination swell; oil finished black walnut case, paneled all around, with mouldings, brackets, scroll work, and carved ornaments; music desk and carpeted double-blowing pedals; price \$145; and for larger clubs a proportionally larger and more costly one. The instruments made by this firm are famous for purity of tone and perfection of workmanship.

For Clubs of Five Hundred, with \$500 we will give a full paid up registered LIFE INSURANCE POLICY of \$1,000 in THE NORTH AMERICA LIFE INSURANCE COMPANY, of New York, on an accepted life of the age of 25 years, or its equivalent if the person is older. These policies are registered in the State Department at Albany, where securities for their payment are deposited, thus making them absolutely safe.

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NORWAY OATS.

From the mass of testimony, showing the advantage to be gained by the substitution of this seed for all other kinds, we present a few more extracts.

NO HUMBAG ABOUT THEM.

HENRY PULEMAN, Esq., Galesville, N. Y., writes, Aug. 16, 1869: The Norway Oats I had of you are no humbug; on the contrary, are all you recommended them to be last year. I sowed on clay loam soil, and can beat all my neighbors about here for oats of any kind. No farmer can afford to raise any other kind if he can get these even at \$10 per bushel.

HEADS TWO FEET LONG.

G. O. BRISTOL, of Tioga, Pa., writes: My Norway oats look very promising, standing four and a half to five feet high. I have measured some heads which are two feet long and contain upwards of four hundred kernels; it far surpasses anything ever seen in this section. I have had a great many calls from parties who want seed.

WOULD NOT PART WITH HIS SEED AT ANY PRICE.

Lexington, N. C., Aug. 1, 1869. SIRS: I sowed 16 pounds of your Norway Oats, half on a poor piece of land by the side of some black spring oats, and the balance on some rich tobacco land. The first were at least a third higher than the others by their side, and double the kernels on the heads. The drought damaged our oat crop seriously, in fact, it is about a failure, but I find on measuring that I have 14 bushels. I am so well pleased with them that I shall sow a good part of them again, and would not part with it for any money. Yours respectfully, ABRAM CROSS.

TWO HUNDRED AND FIFTY BUSHELS FROM TWO ACRES.

Tranquility, N. J., Aug. 6, 1869. D. W. RAMSDSELL & Co., DEAR SIR: We have harvested our Norway Oats, and must say that they are all that they were recommended by you. They were ripe as soon or a little sooner than our other oats, and of a much better quality. I am satisfied that I can raise three bushels of the Norways to one of common oats and with one-third of the seed. For feeding they must be superior, as they have thin hulls and plump meats. From our two acres I think we shall run some over two hundred and fifty bushels. The largest head I have found is 19 inches long. Yours respectfully, CLINTON VASS.

THE BEST HE EVER SAW.

JOHN COLEMAN, Esq., of Middleton, N. Y., writes, Aug. 17, 1869: I purchased some of your Norway Oats last spring, and sowed them on light soil, without manure. They grew large and tall, with stalks capable of standing under great weight of grain. They are of better quality and ripen full as soon as other oats. As a field oat I think they are superior to any oat I ever saw. I heartily recommend them to farmers, and shall sow my entire crop next year.

"RAISED AN EXCITEMENT."

Womelsdorf, Berks Co., Pa., Aug. 5, 1869. MESSRS. RAMSDSELL & Co.: The thirty-five pounds of Norway Oats I purchased from you last March was sown on about one acre of land, good soil, and will yield me at least 80 bushels. Some good judges even estimate it at over a hundred bushels. I am free to say that it has more than met my most sanguine expectations, and has raised quite an excitement here. They ripen with us a little later than other oats. They are heavier and more nutritious, and grow a strong straw that will not fall, no matter how rainy the season is. I can cheerfully endorse and recommend it to my brother farmers throughout the country. Yours truly, E. PENN SMITH.

HEADS TWENTY-SIX INCHES LONG.

Smyrna, Me., Sept. 5, '69. I can recommend your Norway Oats to every farmer, but if they could only see them growing in head, they would need no endorsement from me. They tell their own story. I measured one head 26 inches long, and there are many over 20 inches and upwards, and the oats pile right up on the heads. Truly yours, JOHN MARKS.

HOW HE COULD HAVE MADE MONEY.

Terre Haute, Ill., Sept. 2, '69. The seed I had of you has done well. I paid \$10 for one bushel. If I had bought 15 bushels at that price it would have paid me well. They stood up straight while others by their side fell flat to the ground. They are much heavier and better in every respect. Respectfully yours, E. GUERNSEY.

A GREAT DEMAND NEXT YEAR.

Thomson, Ill., Sept. 4, '69. I was unfortunate in harvesting my oats, the weather being bad. I estimate the loss at full one-fourth of the crop. However, I find I have 83 bushels left, which is quite satisfactory for a seeding of one bushel. My common oats, from 3 bushels' seeding, yield ordinarily about forty bushels to the acre. My neighbors all want some of these "big oats," as they are called here. I shall grow pretty largely next year, for there will be a great demand for them next year when our farmers learn more of their excellence. Yours respectfully, N. S. FRENCH.

SURPRISE OATS AGAIN.

Lincoln, Logan Co., Ill., Aug. 30, '69. DEAR SIR: Last spring I purchased two quarts of your Norway Oats and two quarts of the Surprise oats that some said were better than yours. I sowed them both the same day on good mellow ground, about a rod apart, and both grew well until they began to head, when the Surprise broke down about middle way of the straw, heads laying on the ground. The Norways stood erect, not a stalk falling. From the two quarts of Surprise I had one bushel; from the two quarts of Norways I had three bushels. I can recommend your seed as ahead of all others. Yours truly, WILLIAM SHEA.

EIGHTY-FOUR QUARTS FROM ONE.

Warren, Mass., Sept. 13, '69. I obtained from you one quart of the Norway Oat seed

last year, from which I have raised two bushels and twenty quarts. They were much admired by those who saw them growing. Many will be wanted in this section, and if you will send me some circulars I will gladly circulate them for you. Truly yours, S. HORNER.

FORTY-FIVE BUSHELS FROM ONE-HALF BUSHEL OF SEED.

Newburgh, Md., July 29, 1869. GENTLEMEN: I purchased half a bushel of your Norway Oats from Jones & Clark, New York. They were injured by the drought to a considerable extent, but I find on measuring that I have a yield of forty-five bushels from the half bushel of seed. They ripen about the same time as the common oat and are much heavier. Very respectfully yours, P. A. L. CONTELE.

YIELD FOUR TIMES THAT OF COMMON OATS.

Wetmore, Kansas, Oct. 15. I had two quarts of your seed and tested it carefully. They are entirely different and far superior to any oat I ever saw. By a careful estimate I make the yield about four times that of common oats, with same culture. I counted eighty-six stalks from one kernel. Respectfully yours, NELSON B. SIMMONS.

WOULD NOT DO WITHOUT THEM FOR TEN TIMES THEIR COST.

Carrolltown, Mo., Aug. 9, '69. I sowed one bushel on bottom land, and they overflooded, which destroyed a large part of my crop, but I have enough to see what they are and remarked to my men when we were harvesting them that I would not do without them for ten times their cost. They should be harvested before fully ripe, as the meat is heavy and they shell more readily than the small oat. Yours truly, D. SETTLES.

LOOK OUT FOR BOGUS SEED.

Bruford's Store, Pa., Aug. 28, 1869. DEAR SIR: I understand you have the genuine Ramsdell Norway Oats. I please to let me know the price. I have been badly cheated by N. P. Boyer & Co. They sold me common oats under the name of Norways. This year I hope to get the pure seed. Yours truly, D. MOSTALLER.

SPURIOUS SEED.

Hundreds of bushels of Canada, New Brunswick, Surprise, Poland, and numerous other varieties of oats were sold last year as our seed. Parties are again advertising and attempting to deceive the farmers. One party has already forwarded several thousand bushels of Canada oats to the West, where he is selling them as our seed. We cautioned farmers last year against these frauds. But, because they could buy at a lower price, and the representations appeared honest, they purchased elsewhere; and now, when they have learned by the result that they were deceived, they are writing to us to punish the swindlers. To all such we beg to say that we have enough to do to attend to our own business. We renew our caution, and give notice that hereafter we shall sell our seed under the name of the RAMSDSELL NORWAY OATS. The demand for this seed is sufficient to guarantee a sale of every bushel in the country at our established price; and farmers who bought seed from us are asking from \$7.50 to \$10, and one evidence of seed being spurious is the fact of its being offered at less than the regular established prices. No man is likely to go to the trouble and expense of advertising and selling this seed at a less price than he knows we would pay for it, if genuine. There is not seed enough to supply the State of California alone, while others are coming in from every State and Territory, and many parts of Europe. There are upward of five millions of farmers in the United States yet to be supplied with this seed, and the whole crop this year would not give each a pint. Where one farmer had the faith in our representations to buy last year, thousands are satisfied and anxious to get it now. One word more on this subject of inferior seed. Many seed-dealers bought and sold seed last year which they may honestly have believed to be genuine, which was not; and some farmers, we are sorry to say, who raised 25 bushels, sold more than twice that quantity. The demand which the great success of this grain the past season has created will sweep off the entire stock in a short time, and will offer unusual advantage for bogus operators; and we are compelled, in justice to ourselves as well as for the protection of the public, to publish the above facts. The only safe way for the farmer is to make up his mind how much he wants, and if a neighbor whom he knows and can trust has the seed of his own raising, buy of him; if not, send at once to us. Our best and heaviest seed, Northern grown, under the personal supervision of Mr. Ramsdell, will be offered first.

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We claimed that they were better in quality. Reliable farmers say they are worth 100 per cent more for home consumption, and will make whiter and sweeter flour than the best wheat.

Farmers who can do so are invited to visit either of our stores, and examine the grain and specimens of stalks, root, branch, and head. We have mammoth roots producing as many as 245 stalks from a single kernel. These are visited by busines men, and considered, justly, as we think, the wonder of the agricultural world. We shall continue to furnish the genuine Ramsdell Norway Oats as a specialty for two years to come. The price next year will not be less than \$1. One farmer in every town can make a small fortune on the crop from a few bushels.

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In the early part of Sept. of that year, the grapes were shown to Charles Downing, Dr. C. W. Grant, and other leading Horticulturists in the vicinity of Newburgh, also to a few others eminent as nurserymen, and so great was the interest taken in the matter that one of the persons visiting the vine offered a liberal price for the stock, which was valued by Messrs. Thorne, so far as they could control it, at Five Hundred Dollars. Some fine specimens of the fruit were about this time shown to one of the leading editors of the *American Agriculturist* who pronounced so decidedly upon its merits that the Messrs. THORNE at once placed its value at \$2,000, but sold it afterward to Dr. C. W. Grant for \$1,600.

The entire stock (with exception of a few small vines) was removed during the following November, to "Iona," and Dr. Grant commenced at once to grow strong vines of it for general trial.

These vines were widely distributed in the hands of horticulturists from the Atlantic to west of the Mississippi, and now voices of praise come from every State where it has been on trial. A few are given below.

MAINE.

ALBURN, Maine, Sept. 15th, 1869.

Messrs. HASBROUCK & BUSHNELL.

The Eumelan grape is just the variety for our northern climate. We shall want Five Hundred No. 1 vines. Please give us best prices and oblige,

Yours Truly,
R. G. CHASE & CO.

MASSACHUSETTS.

READING, Mass., Aug. 1869.

Messrs. HASBROUCK & BUSHNELL.

The Eumelan vine had of Dr. C. W. Grant has grown strong and is perfectly healthy. It now carries nine bunches of grapes, several of which are specimen bunches. It is a vigorous, almost rampant grower—leaves dark, thick and parchment like; while the wood is hard and very short jointed. Thus far I have not one among fifty or sixty varieties which (all things considered) has pleased me so much as the Eumelan. Respectfully,

Rev'd. WM. H. WILCOX.

CONNECTICUT.

HARTFORD, Ct.

Messrs. HASBROUCK & BUSHNELL.

The Eumelan has made a strong and healthy growth, and gives promise of entire success. The fruit is all that can be desired in quality to place it in the highest rank.

Yours truly,
C. M. BEACH.

Numerous other testimonials have been received from the States above-named, as well as from Iowa, Missouri, and wherever sent, which will be found in pamphlet. Wherever the Concord vine will grow, the EUMELAN may be planted with entire confidence, and with full assurance that grapes of surpassing excellence may be obtained by using an average degree of skill in cultivation. Our stock comprises a large assortment of all the leading varieties of grapes, including the new kinds, WALTER, and MAITHA. Also a large stock of RASPBERRIES, BLACKBERRIES, GOOSEBERRIES, STRAWBERRIES, CURRANTS, &c., all of which have been grown with requisite skill and care, and will be sold at lowest cash rates.

Premiums have been awarded the EUMELAN grape for best quality during the fall, at the following Exhibitions, viz.:

NEW YORK STATE FAIR, ALBANY,	-	-	Sept. 13 to 16.
PENN. HORTICULTURAL SOCIETY, PHILADELPHIA, which held joint exhibition with American Pomological Society,	-	-	Sept. 13 to 16.
OHIO STATE FAIR, TOLEDO,	-	-	Sept. 13 to 16.
GENEVA HORTICULTURAL SOCIETY, GENEVA, N. Y.,	-	-	Sept. 23 to 25.
HAMMONDSPORT EXHIBITION,	-	-	Sept. 29 to 30.
N. Y. STATE GRAPE GROWERS' ASSOCIATION, CANANDAIGUA,	-	-	Oct. 5 to 6.

Also at several other important Exhibitions.

By our system of Club agencies all who join with Clubs for the purchase of vines will have the benefit of our hundred prices,—the Club agents receiving large Premium vines for their trouble in securing and forwarding the orders. Send stamp for Pamphlet giving History of the EUMELAN. Clubs should be formed for the introduction of these vines in every town and village. By so doing every family may soon have the luxury of the best grapes, thus adding greatly to health, and contributing much to the real enjoyment of the table.

Let every one interested in the introduction of the best fruits among their neighbors send for our price list and Club proposition. Have you one, a dozen, or a hundred good, vigorous vines, which produce worthless fruit, or of varieties so late in ripening as to be worthless? Send for instructions how to graft such vines successfully. Address

HASBROUCK & BUSHNELL,
(Successors to C. W. Grant), "IONA," near PEEKSKILL, N. Y.



NEW YORK.

PULTENEY, STEUBEN Co., N. Y., Sept., 1869.

Messrs. HASBROUCK & BUSHNELL.

The Eumelan vine had of Dr. Grant for trial has proved so far an entire success. It is a vigorous grower, is entirely hardy, and vines free from mildew. The fruit ripens with me earlier than any other grape I have, and the quality is not inferior to Delaware or Iona.

Respectfully,
D. S. WAGENER.

GENEVA, N. Y., Oct. 10th., 1869.

Messrs. HASBROUCK & BUSHNELL.

The Eumelan vine received from Dr. Grant ripened fine fruit this the second year from planting. I have exhibited it at several leading fairs, each time receiving premium for quality. The vine is strong and vigorous with perfect foliage. No vine of same age among all my varieties begins compare with it. A. MERRILL, M.D.

PENNSYLVANIA.

NORTH EAST, Pa., Aug. 1869.

Messrs. HASBROUCK & BUSHNELL.

The two Eumelan vines had of C. W. Grant, have made good growth, and are entirely healthy. The five hundred Eumelan vines purchased of you last spring for the South Shore Wine Co. have grown well, and are doing better than any other vines planted by me, of same age.

Respectfully yours,

JOHN E. MOTTIER,
Supt. South Shore Wine Co.
NEW JERSEY.

New York, Sept., 1869.

Messrs. HASBROUCK & BUSHNELL.

I am pleased to report the Eumelan a success upon my farm in New Jersey where I have hitherto been unable to get a grape of first quality to grow at all.

Yours Respectfully
DR. CYRUS WEEKS.

OHIO.

Clyde, Ohio, Sept. 1869.

Messrs. HASBROUCK & BUSHNELL.

The Eumelan sent me for trial by C. W. Grant is the most remarkable vine I have ever seen, and I have thousands of others growing. It bore several bunches of fruit this season which were ripe long before the Delaware. The Eumelan grapes shown at our State Fair at Toledo, Sept. 13th to 16th were the only ripe grapes upon exhibition. I esteem the fruit above that of any other black grape. Upon tasting the Fruit last year for the first time I desired to have an acre of the vines. Last spring I planted 500 Eumelan which surpass any of same age I have ever seen, and my experience with the fruit this fall make me desire to have ten more acres of Eumelan. How can you furnish the vines?

Yours
M. B. STEVENSON.

WISCONSIN.

MADISON, Wisconsin, Aug. 2d, 1869.

Messrs. HASBROUCK & BUSHNELL,

Gentlemen: The Eumelan sent me by Dr. Grant is now on its second year's growth, making a good show of fruit, and a masterly growth of wood. I must say, thus far, I have never cared for a vine which more fully "fills the bill." The characteristics generally ascribed to it seem to be fully developed here, and after passing through the severest trial of winter the vine has ever sustained in this locality, it now manifests more vigor than any variety I have ever handled.

Very respectfully,
WM. BROOKS.

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CHARLES DOWNING.

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RECOMMENDATION FROM HON. MARSHALL P. WILDER,
President of the American Pomological Society.

BOSTON, Oct. 4, 1869.

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I have received a copy from Mr. Charles Downing of the second revised edition of the "FRUITS AND FRUIT TREES OF AMERICA." It is the most comprehensive of any similar work, in fact a complete ENCYCLOPEDIA OF AMERICAN POMOLOGY brought down to the present time.

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As a work of reference it has no equal in this country, and deserves a place in the library of every Pomologist in America. MARSHALL P. WILDER.

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The large experience of the author in improving the character of American herds adds to the weight of his observations, and has enabled him to produce a work which will at once make good its claims as a standard authority on the subject. An excellent feature of this volume is its orderly, methodical arrangement, condensing a great variety of information into a comparatively small compass, and enabling the reader to find the point on which he is seeking light, without wasting his time in turning over the leaves.

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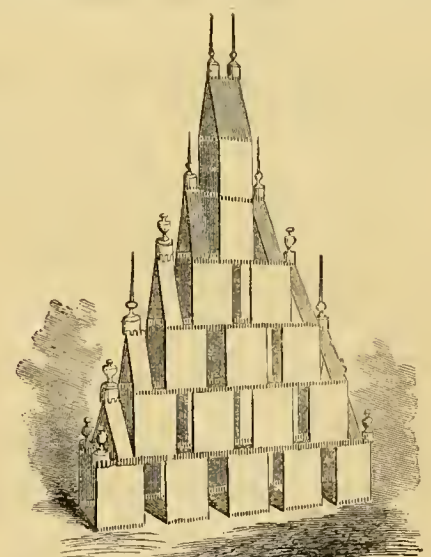
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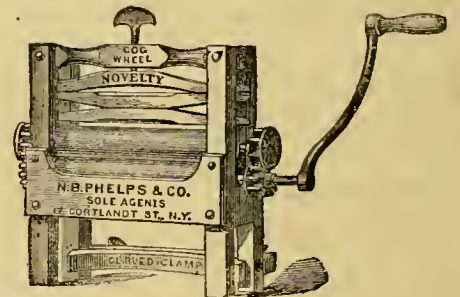
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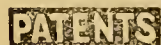
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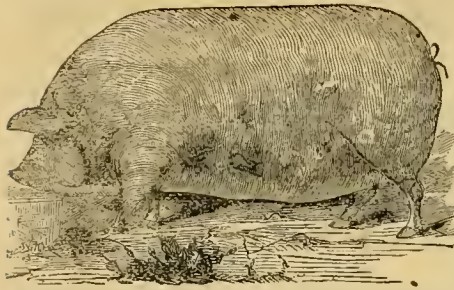
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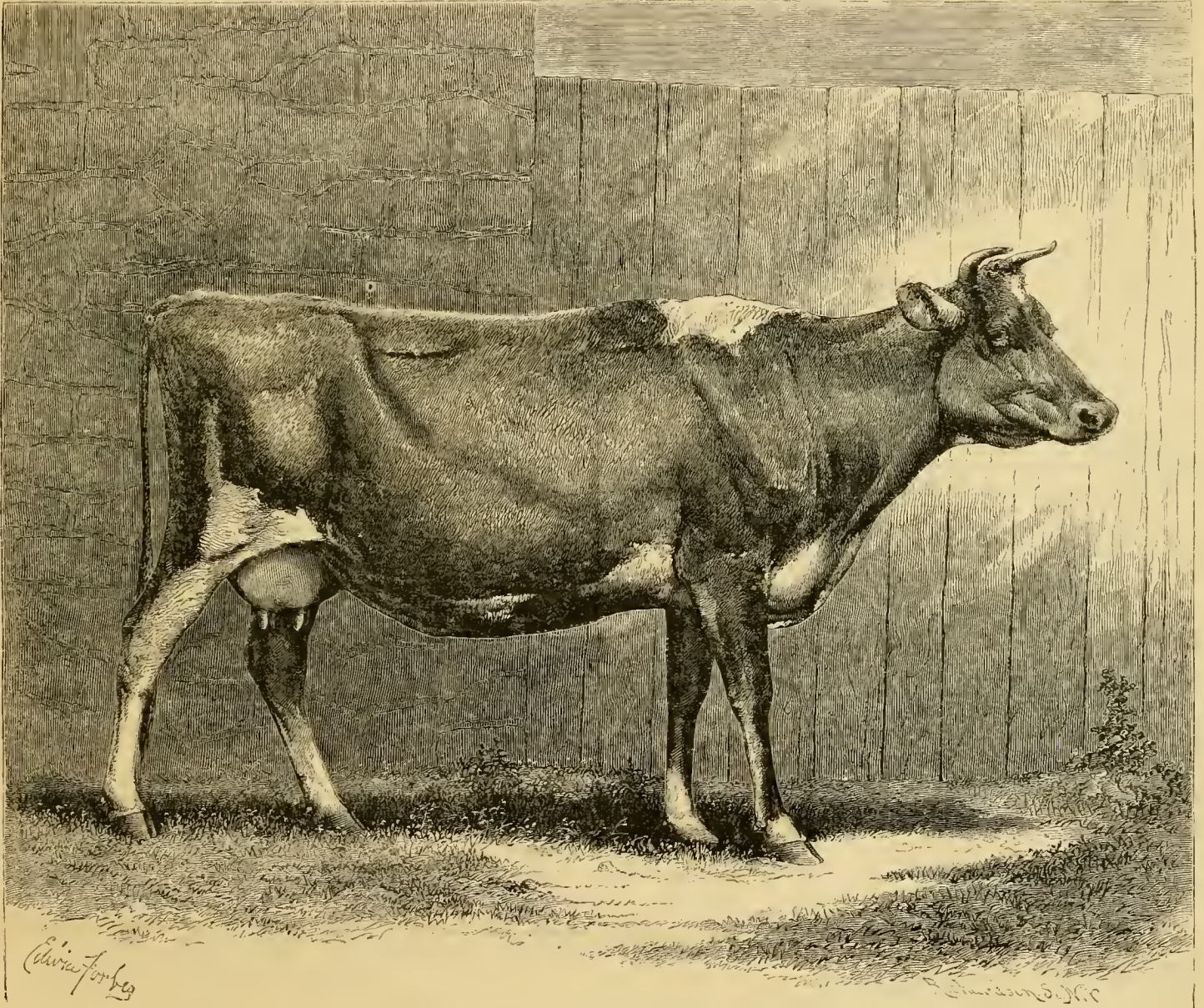
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VOLUME XXVIII.—No. 12.

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Calendar for December.

Calendar for December table with columns for Day of Month, Day of Week, and Sun rises, sets, Moon rises, sets for Boston, N. York, Wash. N., and Washington, Maryland, Virginia, Kentucky, Missouri, and California.

PHASES OF THE MOON.

Table showing phases of the moon for Boston, N. York, Wash. N., and Washington, Maryland, Virginia, Kentucky, Missouri, and California.

AMERICAN AGRICULTURIST.

NEW YORK, DECEMBER, 1869.

Hail Winter! We shivered when those stinging October frosts came, whitening the ground, stiffening the crust, freezing the potatoes, wilting the cabbages, stopping the growth of the turnips. Now, we rejoice in the ice and snow. The keen air fairly warms us, and we can take hold with a will of any work which the season offers. Nevertheless, the period is one of comparative rest, and the best time farmers have to compare notes, to meet in farmers' clubs, to read, and lay out plans for the coming busy season. Winter is the harvest time of ideas—and many a lesson of practical, homely wisdom will the results of the summer teach, if they are carefully thought over. December is the hill-top from which two years may be seen. The far stretching retrospect is brought close, by the clear wintry air, while before us lies the fair prospect, dim, yet picturesque in the uncertainty of the hopeful future.

The most useful possession a man can have is experience. We all need some of our own, but he is richest who can make use of the experiences of other men. This is what Farmers' Clubs and Agricultural Societies are useful for. This is all the use there is in agricultural papers. Books are, or should be, somebody's experiences, or they should be based upon them. An hour's talk with a neighbor will almost always elicit a valuable fact about something. An agricultural paper should offer the choice experiences of one hundred neighbors.

Every citizen has a vital interest in the intelligence of the community. Where there is a reading population, there is thrift. Where the people are interested in lectures, literary and farmers' clubs, circulating libraries, etc., there will usually be little of thieving or crime, little of intemperate excesses, little of litigation and quarreling among neighbors. These things are rife where schools and books are scarce. Don't grumble at the school tax unless it is misspent, but see to its proper expenditure, as every good citizen may, encourage everything that will make general culture more general, but especially be mindful of the responsibility which rests upon every parent to encourage such tastes in his children that, in after years, they may take their places among the influential and

well-informed, and not among the opposite class. Of this there is always a large enough number without your children being included.

Hints About Work.

A farmer's first concern is for his family, the next for his live stock, the third for his men, that they have work enough laid out, and that they do it well. Nothing so destroys one's peace of mind, and so depletes his purse, as hiring lazy men, who pretend to do his work. A good man will be spoiled in a few days sometimes for the lack of knowledge and appreciation on the part of the master. The employer must be critical and commendatory. His praises should be indirect and inferential, rather than positive; but the man should realize that you are pleased, not with him, but with his work. A good man will usually stand very little patronizing. Respect a man's independence of feeling, but check it if it exceeds the bounds of common sense, as it is very apt to do in the case of the newly-arrived foreigner.

Surface Water, flowing over half frozen ground during winter thaws and rains, carries with it a great amount of fertility that should not be allowed to run to waste, but turned upon meadows.

Muck Mining.—A great deal of ditching in muck swamps may be done in winter. The surface, during most of the cold weather, is not so deeply frozen but it may be taken off, and the ditches are of course commenced at the outlet, and followed on a level. Pond holes are usually too full of water to clear out, but if they can be drained, vegetable matter of great value may be secured, mingled with the choicest materials, washed down from the uplands. Swamp muck is greatly improved by freezing and thawing, and to this end should not be placed in too large heaps. It is well to let it lie awhile just as thrown out from the pond holes or ditches, and to move it before the surface is thawed, toward spring, when it may be placed where it may be composted with lime, ashes, or manure.

Corn Fodder.—This neglected and abused forage is, if properly cured, made by a little labor nearly as valuable as good upward hay, and decidedly superior to hay from over-ripe grass. The labor consists in cutting so small that it may be shaken up and intimately mixed with bran after wilting. It should be allowed to soak twelve hours if possible, and if it heats, all the better. The finer it is cut the better, with a single exception—it should not be three-quarters of an inch to an inch long, for if of this length, stiff pieces of stalk often stand upright in the mouth, and by their sharp edges wound the gums. Either very fine or rather coarse chaffing are therefore preferable to an intermediate grade. Coarse chaffing may be done by hand, but fine hand-cutting is too much work.

Steaming coarse fodder.—This, no doubt, pays abundantly if it can be done for a dairy of fifteen or twenty cows, and the usual young stock.

Live stock.—Every animal should be at least well looked at by the farmer personally, every day. The more carefully he can look to his stock, the better for them and for himself. Look to the hay that is fed long, and to that which is cut up. Trust no guess-work in regard to the amount of grain or meal fed. It is well to measure out a week's supply, and on the rest, turn a key and pocket it.

Horses.—Bed well, clean thoroughly, have the stables well ventilated. Feed according to labor required. Bran and corn-meal, half and half, by weight, is excellent as winter feed on cut hay or unthrashed oats. Keep horses in use well shod with heavy shoes and thick caulks, that may be sharpened whenever it is icy, and keep them sharp.

Colts, of all ages less than three years, may run together. An open shed or hovel, deep and warm, opening into a spacious yard, affords them good quarters, if they have enough to eat. Oats in the sheaf, cut fine, wetted and sprinkled with bran, is good for them once a day. A few roots, potatoes, turnips, or carrots, will be very acceptable, and encourage growth. Colts past three years may be broken to saddle or harness. Employ gentleness

The Fruit Grower.—Edited by E. Rumley, Gilman, Ill. Eight page monthly. Fifty cents a year. A wide-awake sheet which starts with excellent principles. He says in relation to advertisements, "we want no whiskey bitters, lottery, gift or dollar sales, at any price; and, above all, save us from quack doctors."—You are on the right track, neighbor, send us your first number, and go on and prosper.

The Humbugs are at Work, and quite briskly just now, as will be seen by our exposures in another column. Some of their present operations are quite expert, and people should be on their guard. Numerous testimonials come to us, showing the great value of our humbug articles to the country generally. We shall continue a vigorous war with them during the coming year, and they will find little business among our readers. Even on this account alone we are sorry the paper is not seen and read by every person in the land.

and sugar, as preferable to the "twist" and whip.

Oxen.—It is a cruel practice to drive oxen on the road in winter un-shod, or smooth—and there have been hundreds maimed by falling, so that they were even lost for beef. Because an ox will bear a great deal of rough usage, it is no reason for putting him to torture or neglecting him. Keep well stabled.

Cows.—The more a milch cow eats the better. There is a tendency in all she digests over and above enough to sustain her life and repair the wastes of the system, to go to milk, so, as a rule, the more she eats, the more milk she will give. The longer a young cow is milked, up to within four to six weeks of calving, the more is the milk-giving tendency fixed. Meal fed now is cream in May.

Swine.—Boiled corn is just as good as ground, and it is a great saving. It should be boiled soft enough to crush between the finger and thumb. Keep fattening hogs in very warm styes, if possible—all swine do better for being warmly housed.

Sheep may have the range of a small field or large yard. They will relish hemlock boughs, and should have some kind of grain and oil-cake, in moderate quantities, regularly, to keep them gaining. Give plenty of litter, and spread it evenly.

Poultry, in warm quarters, if properly fed, will lay freely. Never throw down an excess of grain or any feed. Feed them as long as the fowls or ducks will run after it. Soft feed in the morning, scrap cake at noon, and hard grain at night, is the best rule. Some cabbage leaves or other greens will prove very acceptable as well as healthful.

Protection against frost and snow.—Before the frost penetrates through the root-pits, cover them with additional layers of earth or of straw, kept well in place by poles laid upon it. Pumps and pen-stocks may be protected by setting headless barrels around them, and packing them full of moderately strong horse manure. Pumps and pipes are easily thawed out by attaching a wire or ratan to a rubber tube, through which hot water can be poured, while, by means of the wire the pipe is kept in close contact with the ice. Snow, which lies upon roofs, often becomes saturated with water, and thus subjects the roofs to inordinate pressure, to which they not unfrequently yield. Such accumulations are easily removed before they become soaked with water.

Manure.—Working over, checks fermentation and "firefanging" as easily as water does. With materials enough to compost with manure under cover, an immense amount can be made. Common barnyard manure is so rich, that it often burns if neglected; that composted with muck or soil has little or no tendency to do this, but steadily improves.

Work in the Horticultural Departments.

With this month we complete the circle of the year. To those who have accompanied us from month to month, we need not say that these columns are not intended to be more than seasonable suggestions, and that it will often be an advantage to look back a month or two, or even forward, (which may be done by turning to last January) and see if there are not some needed reminders. Every thing should be done during the winter, which will save an hour's labor next spring.

Orchard and Nursery.

Newly planted trees are benefited by having a mound of earth, a foot high, drawn against their trunks. This enables the tree to withstand the heavy winds, and prevents the attack of mice. The earth must be compact, and have no rubbish mixed with it to make it loose.

Mice, which are often so troublesome, are kept off by other means also. Cylinders of tin or sheet-iron are sometimes used, as are cloth and tarred roofing-paper. Keep litter from near the trunk, and when there is a fall of snow, tramp it down around the trees, so that the mice cannot work under it.

Rabbits are also to be guarded against. The use of fresh blood, thrown upon the trunk by means of

a swab, is found to be effectual. Laths, bound around the trunks with wire or pieces of corn-stalk attached in the same way, are used. Let boys set traps, as rabbits make a good stew or pie.

Animals belonging to the farm, must be prevented access to the orchards.

Heeled-in Trees should be looked to, if the work was not thoroughly done at the time. There should be no cavities among the roots, but a good smooth mound of earth made over them. See that no litter is near by to harbor mice, and for the same reason put no straw over the tops of the trees. Provide for carrying off the surface water.

Water should not be allowed to stand in the orchard; open surface drains, and if underdraining is needed, see what the author of "Walks and Talks" says about draining in winter, on page 410, last month. What he does, others can do.

Pruning.—Such pruning as can be done with the knife, such as heading back young trees, is done in our nurseries all winter. Authorities differ as to the propriety of removing large limbs at this season. It is, however, better to prune a neglected orchard at this time than to leave it in a suffering state. Large wounds should be painted over with melted grafting wax, or some similar preparation, to protect the surface.

Cions are to be cut when the trees are not frozen. See article on preserving them on page 456.

Root-grafting is usually done when the weather is such as to put a stop to out-of-door work.

Seeds.—Peach and plum stones, if kept in a cellar during the winter, must be exposed to freezing before spring. The best way is to spread them on a bed, and cover them with a few inches of earth or tan-bark, and allow them to remain out all winter.

Manure may be spread upon the orchard. Do not put coarse manure close to the trees.

Labels of various kinds are always in demand, especially when trees are sold. Moss and packing materials should be laid in by the nurseryman.

Fruit Garden.

Young Trees here, demand the same care as those in the orchard. See that dwarf trees are not injured by heavy snows.

Raspberries.—All the foreign kinds, and those of foreign parentage, need to be laid down and covered with a few inches of earth.

Grape-Vines.—It is a safe plan to lay down all vines, the hardiness of which has not been tested, and, indeed, all young vines, whether hardy or tender, will do all the better for a covering of earth. Young vines that have been pruned, should have the earth drawn up around them. Pruning may still be done in mild weather, and the wood saved for propagation, if needed.

Strawberry Beds should be covered. Bog or salt-hay, straw and leaves, are the materials generally used. Corn-stalks are sometimes laid between the rows, and pine leaves are used where they are readily obtainable. It is the earth rather than the plants that need covering; take care that the material is not too thick over the vines.

Kitchen Garden.

Roots, if not finally disposed of for the winter, should be housed without delay. See article on page 414, last month.

Parsnips, Salsify, and Horse-radish are perfectly hardy, and what is not needed for winter use, may be left in the ground until spring, or be dug during a thaw in winter.

Spinach, Sprouts, and Leeks that are to be wintered in the ground, need a covering in cold localities. Bog hay or other litter may be used.

Pits and Trenches, in which vegetables are stored, must not be entirely covered too soon, nor should the contents suffer from frost. It is well to have the covering material at hand, to add in case the weather becomes severe.

Cabbages.—Cover them with earth—the heads be-

ing of course inverted—about six inches deep, with the surface of the covering smoothed to shed rain.

Manure is to be accumulated at every opportunity. Muck, sods, waste from breweries, distilleries, and the like, all add to the value of the compost heap. The usually wasted fertilizers of the dwelling should be made available. See last month's article on home-made earth-closets.

Seeds.—Finish thrashing and winnowing, and put all away with correct labels, where mice will not get at them, and where they will be free from dampness, and not exposed to great changes of temperature. Keep no seeds of doubtful quality.

Flower Garden and Lawn.

Clear up, and make all as tidy as possible. The garden need not present a forbidding appearance in winter. All movable articles, such as

Trellises and Sods, as well as garden ornaments, should generally be put under cover, as they will last much longer than if exposed.

Protection of roses and other half-hardy shrubs is best given by means of earth or sods. See note on protecting roses on page 457.

Bulbs will do all the better if the beds are covered with coarse manure, and

Herbaceous perennials, even if hardy, are all the better for the same treatment. The roots of the somewhat tender ones are well protected by having a mound of earth made over them.

Wistarias and other climbers should, in localities where they are not hardy, be taken from the trellis and covered with a few inches of earth.

Shrubs, especially evergreens that are not entirely hardy, are best protected by fastening some cedar boughs around them, or in their tops. This is the safest treatment of young evergreens, even of hardy sorts, until they become established.

Snow should not be allowed to remain in the tops of evergreens or dense shrubs until it becomes compact and icy.

Cold-Frames containing half-hardy plants should be aired whenever the weather will allow. Keep them as dormant as possible. See that the plants are not injured by mice.

Lawns may be manured with well-rotted compost.

Improvements of various kinds, such as road-making may go on when the weather will allow.

Greenhouse and Window Plants.

Heat, in houses where plants are to bloom, must be at least 60 or 65° during the day, and fall to 15° less during the night. Plants cannot be kept at the same temperature day and night, and remain in health. In houses where plants are merely kept out of the frost, the night temperature may go down to within a few degrees of freezing.

Bulbs that were potted and set in a cool, dark place, may be brought to the light, if they have formed good roots.

Air the house whenever it is safe; and air should be given to window plants every pleasant day.

Water.—Plants suffer more from over-watering than from dryness as a general thing. Each plant has its requirements, and no general rule can be given. A little experience will teach one when a plant needs watering. Give house plants a sprinkling overhead every now and then. This can easily be done by setting the pots in a sink or bathtub. It will remove

Dust, which is one of the greatest enemies of window gardening. Plants with large, smooth, and thick leaves, like Camellias, Ivy, etc., can have the leaves cleaned by means of a damp cloth or sponge. This operation will help remove

Insects, which will often get upon house plants in spite of the best care. The green fly, or aphid, is readily disposed of by tobacco smoke, and the red spider will yield to frequent showerings. The last named insect is generally the cause of browned leaves which appear upon plants in dry rooms.

AMERICAN AGRICULTURIST.

ORANGE JUDD & Co., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies: Four to nine copies, \$1.25 each: Ten to nineteen copies, \$1.20 each: Twenty copies and upwards, \$1 each. Papers are addressed to each name.

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A Good Watch—Free of Cost—a genuine \$40.00 American Waltham Watch, with heavy 3-ounce Hunting-case—a capital time-piece that will stand you through life: Send 50 subscribers for the *American Agriculturist* at \$1.50 each, or 150 at \$1.00 each, and you will get the watch free.

OR—: A Lady's Gold Watch Free—a splendid article of Waltham make, sold usually for \$100 or more, and beautiful as a present to your wife or *any one else*: Send 110 subscribers at the regular price of \$1.50 a year. Others have done so.

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OR—: Splendid Breeding Sheep Free—either Cotswold or Southdowns, thoroughbred, raised by the best breeders. These sheep will multiply and diffuse their excellent qualities very rapidly, and one or more of them should be introduced into every neighborhood raising sheep: A club of 100 to 210 subscribers will secure one of them free! (See Nos. 13 to 20 in Table of Premiums.)

OR—: The newest and best Potato Free—two pounds of "Bresce's King of the Earlies," which is promised to eclipse even the Early Rose! Two pounds of these will soon multiply to a large stock. Only 5 subscribers will bring you a post-paid 2-lb. parcel of these new potatoes.

OR—: The best Pigs and Poultry Free—the best home-bred, and imported speci-

mens; warranted pure by the reliable breeders who supply them for these premiums. Clubs of subscribers, numbering 22 to 66 names, will secure these animals without charge, and they are worth securing! (See Nos. 21 to 28 in Premium Table.)

OR—: The Best Clothes Wringer Free—one of the most valuable Housekeepers' Helps ever invented—one which will repay its cost every few weeks, and keep on doing so—both in saving labor and saving garments: Only 18 subscribers are needed to get this Clothes wringer free!

OR—: A Melodeon Free—one of the best made in the world, one of long-proved excellence—a delightful thing to have in the house, in the school-room, and in the Church where an organ can not be afforded: Send 78 or 138 subscribers. (See Nos. 60, 61, in Table of Premiums, next page.)

OR—: A Superb Tea Set Free—six pieces, of splendid pattern, real substantial, durable double silver-plated,—not dressed up silver-washed stuff: Only 66 subscribers will secure this free!

OR—: Good Tools Free—not poor-tempered, iron things, but of the very best quality—a whole assortment of more than fifty pieces, just such as are really useful for yourself, and your sons, on the farm, and everywhere else, all in a neat chest, the whole worth at the lowest rate \$44.50: Send only 60 subscribers at \$1.50 each, or 190 at \$1 each!

OR—: An Alderney or Devon Bull Free—very fine thoroughbred animals, profitable to the owners, and they will add many times their cost to the value of the stock where they are used. A Club of 120 to 365 subscribers will bring one of these animals. (See Nos. 7 to 12 in Premium Table.)

OR—: Very Fine Table Furniture Free—Castors, Fruit Baskets, the best plated large and small Spoons, Knives and Forks, etc.,—all of extra make and quality, useful, ornamental, and durable. The Premium Table, Nos. 43 to 55, will show how few subscribers will secure these valuable articles. Any Lady can get these subscribers almost anywhere! Or Gentlemen, or Boys can get the premiums to give as presents to others.

OR—: A \$500 to \$700 Shorthorn Bull Free—a superb, thoroughbred animal, from Jas. O. Sheldon's Herd, the finest one in the world—an animal that will soon increase the value of the stock in a neighborhood to the amount of many thousands of dollars. Let the farmers of any neighborhood combine and raise 425 to 580 subscribers, and own the bull in common: Or one person may raise the Club and he will soon derive a fine income from the animal. (See Premiums 1 to 3.)

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OR—: The Piano that Beats the World—(Steinway's of course.) One Lady secured Five of these, worth \$3,250.00, between Sept., 1868, and July last, by sending subscribers to the *American Agriculturist*. Hundreds of other ladies may easily secure at least one. Hundreds of others may secure the lower-priced but excellent Colibri Piano. (See Nos. 62, 63 in Premium Table.)

OR—: A Free Pocket Knife—just the one you want, or your Boy, or your Girl wants—not a wrought or cast-iron affair, but a tip-top steel blade and beautiful handle "better than the 'Best!'"—Only 4-5, or 6 subscribers will secure one! (See Nos. 56-7-8 in Premium Table.)

OR—: First-rate Family Scales—(Fairbanks' of course,) delicate enough to weigh half an ounce, and large enough to weigh yourself if you don't exceed 240 lbs! "A very handy thing about the house" is such a pair of scales. Only 21 subscribers will secure the scales! (Premium 83.)

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OR—: OR—: OR—: A Great Many Other Good Things Free—"too numerous to mention," such as are named in the Premium Table, Nos. 30, 35, 39, 78, 79, 80, 81, 82; and last, not least, No. 85, to light your way!

SEE "Special Notes" on Next Page.

[In the following table is given the price of each article, and the number of subscribers required to get it free, at \$1.50 a year, and at the lowest club rate of \$1 a year. For full descriptions of the articles send for our Special Sheet.]

Table of Premiums and Terms, For Volume 29—(1870)

Open to all—No Competition.

Table with columns: No., Name of Premium Article, Price of Premium, Number of Subscribers required at \$1.50, Number of Subscribers required at \$1.00. Lists various items like Shorthorn Bull, Cotswold Ram, and various tools.

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-nine Premiums, Nos. 29 to 33, 56 to 59, 70 to 74, and 88 to 112 inclusive, will each be delivered FREE of all charges, by mail or express (at the Post-office or express office nearest recipient), to any place in the United States or Territories. —The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance that may be specified. See Description of Premiums in Oct. Number.

SPECIAL NOTES.

Read and carefully Note the following Items: (a) All subscribers sent by one person count, though from one or a dozen different Post-offices. But... (b) State with each name or list of names sent, that it is for a premium.... (c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. You can have any time, from one to four months, to fill up your list.... (d) Send the exact money with each list of names, so that there may be no confusion of money accounts.... (e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer premiums to canvassers. N.B.—The extra copy to clubs of ten or twenty is not given where premium articles are called for.... (f) Specimen Numbers, Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, as they are very costly.... (g) Remit money in Checks on New York Banks or Bankers, payable to order of Orange Judd & Co., or send Post-office Money Orders. If neither of them is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

Description of Premiums.

Every Premium is described in the October Agriculturist, and also in a Special Sheet, which will be sent free to every one desiring it. We have room here for the following only:

No. 41—Clothes Wringing Machine.

—A very useful, time-saving, strength-saving, clothes-saving implement, that should be in every family. The wringing of clothes by hand is hard upon the hands, arms, and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the garments. We have given thousands of these premiums, with almost universal satisfaction. They are made by the Metropolitan Washing Machine Co., Middlefield, Ct.

No. 44.—Cake Basket.

—A new pattern, canoe shaped, nicely chased and very taking. It is double-plated, made by the Lucius Hart Manf'g Comp'y.

No. 45.—Revolving Butter Cooler.

—This is a really good and useful article. It is so arranged that a very little ice in the holder under the plate will keep butter cool and fresh for a long time on the table, even in the hottest weather. The cover revolves underneath the plate for use, and over for protection. The whole is in four pieces, which can all be taken apart for washing. From same house as last premium.

Nos. 56, 57, 58, 59—Pocket Knives.

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provements and valuable inventions of the last fifteen years, whether home or foreign in their origin, have been brought to their aid, and the presence of over 400,000 Waltham Watches are in use. All of the large number of these watches which were given as premiums last year gave entire satisfaction. We have again arranged with this Company to make for us a Silver watch, jewelled, with chronometer balance, warranted by them as made of the best materials in the best manner, and in pure coin-silver "hunting" case; weight 3 oz. This watch we offer as one of our Premiums, with the fullest confidence. Upon the movement of each of these watches will be engraved, "American Agriculturist. Made by the American Watch Company, Waltham, Mass."

No. 66.—Breech-loading Pocket Rifle.

—This remarkable little fire-arm weighs only eleven ounces, yet shoots with great accuracy and power from 30 to 100 yards, or more, and can be loaded and fired five times a minute. It can be carried in a side pocket, and is accompanied by an extension breech, so that it may be used either as a pistol or rifle. It is put up in a neat mahogany case, with 250 rounds of ammunition. The manufacturers are Messrs. J. Stevens & Co., Chicopee Falls, Mass., and the rifles are sold at retail by Cooper, Harris & Hodgkins, No. 177 Broadway. This Premium gave great satisfaction last season. Without the mahogany case, we will give the weapon, all complete, with 100 cartridge, packed in a pasteboard box, on receipt of 18 subscribers, at \$1.50 each. For a full description, see Am. Agriculturist for Jan. 1869, page 32.

No. 84.—Crandall's Improved Building Blocks.

Building Blocks furnish a most attractive amusement for children. They are very simple in construction, will stand years of children's handling without breaking, and give renewed pleasure daily. Churches, Dwellings, Barns, Mills, Fences, Furniture, etc., in almost endless variety, can be built with them, and the structures remain so firm as to be carried about. For developing the ingenuity and taste of children they are unequalled. The Blocks are put up in neat boxes, accompanied by a large hand-bill giving various designs of buildings. This is one of the most successful toys ever invented. Twenty-five thousand dollars' worth were sold last year by Orange Judd & Co., Sole Agents.

No. 85.—Pocket Lanterns.

—A very ingenious and valuable Yankee invention—a complete Lantern, large enough to afford light for walking or other purposes, yet it can be folded for the vest pocket, into a parcel 3 by 4 inches long, and 2 1/2 of an inch in thickness; it contains 3 little sperm candles, matches, etc. Made by the Merriam Manf'g Company (Julius Ives & Co., Agents, No. 37 Barclay St., New York.)

Nos. 88 to 93.—Volumes of the American Agriculturist (Unbound).

—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid.—They are profusely illustrated, the Engravings used in them having alone cost about \$35,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from XVI. to XXVIII., inclusive. For ordinary use, the sets of numbers unbound will answer quite well.

Nos. 94 to 99.—Bound Volumes of the Agriculturist.

—These are the same as Nos. 88 to 93 above, but are neatly bound in uniform style, and cost us more for binding and postage. Sent post-paid.

Nos. 100 to 111.—Good Libraries.

—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any one of the premiums 100 to 111 may select any books desired from the list of our books published monthly in the American Agriculturist, to the amount of the premiums, and the books will be forwarded, Post or Express paid. \$25 or \$50 worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to make their heads help their hands. Any good book will, in the end, be of far more value to a youth than to have an extra acre of land on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres than he would off from 50 acres without the mental ability which reading will give him. Let the Farmers of a neighborhood unite their efforts and get an agricultural Library for general use.

No. 112.—General Book Premium.

Any one sending 25 or more names may select Books from our list to the amount of 10 cents for each subscriber sent at \$1; or 30 cents for each name sent at \$1.20 each; or 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for the month ending Nov. 15, 1869, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW YORK MARKETS.

Table with columns: Receipts, Sales, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 27 days this month and last month.

2. Comparison with same period at this time last year.

Table with columns: Receipts, Sales, Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 27 days 1869 and 1868.

3. Exports from New York, Jan. 1 to Nov. 13.

Table with columns: Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 1869, 1868, and 1867.

4. Stock of grain in store at New York.

Table with columns: Wheat, Corn, Rye, Barley, Oats, Mill. Rows for Nov. 10, Oct. 1, Sept. 6, Aug. 9, July 10, June 7, May 1, Apr. 10, March 1, Feb. 10, Jan. 13.

5. Receipts at tide-water at Albany to Nov. 7th.

Table with columns: Flour, Wheat, Corn, Rye, Barley, Oats. Rows for 1869, 1868, and 1867.

CURRENT WHOLESALE PRICES.

Large table of current wholesale prices for various commodities like gold, flour, wheat, corn, etc., with columns for Oct. 13 and Nov. 15.

The Gold market has been depressed since our last, by freer offerings of coin, and the price has been as low as 126 1/4. It closes at 126 3/4 @ 126 7/8. There has been a more liberal supply of the leading kinds of breadstuffs available since our last, at generally easier though irregular prices. The demand has been fairly active, especially for Wheat, Corn, and Oats, partly on speculative account. Flour closed steadily; Wheat, Barley and Oats, in favor of buyers; Corn, firmly, at the annexed quotations. Shippers are not purchasing as confidently, and the export movement has been on a restricted scale. Cotton has been much cheaper, and quite plenty at the reduced figures, on a moderately active market. Provisions

have been in rather light demand and unsettled; but are quoted somewhat firmer and brisker at the close. Hay has been salable and steady. Hops have been in more request at advanced rates, largely on speculative account. Wool has been moderately inquired for within our former range. Seeds have been dull and nearly nominal. Tobacco slow of sale at about previous figures.

New York Live Stock Markets.

Table with columns: Weer Ending, Beeres, Coors, Calves, Sheep, Swine. Rows for Oct., Nov., and Total in 4 weeks.

There has been a large supply of beef cattle in market this month, and of better quality than for the few months past. The markets have been too full for lively trade, and drovers complain of hard bargains. Butchers have bought in larger lots, but at a decline in price. At no time for the past four weeks have the markets been cleaned out of stock, many stale cattle remaining over from week to week unsold. Butchers say that their stalls are overstocked, and that much meat has been salted or sold by the side at a sacrifice. This state of things makes a dull market, and the butchers very shy of anything but the best, and then they expect both price and weight in their favor. Below we give the list of prices, average price, and figures at which the largest lots were sold.

Table with columns: Oct. 19th, 26th, 9th, 16th, 23rd, 30th. Rows for Large sales and other metrics.

By a comparison of these with the figures given for last month there will be seen a marked decline in price, and this, together with an advance of at least ten per cent in quality, makes a wide difference in the condition and feeling in market. Many really fat steers sold as low as 14c. to 14 1/2c. per pound, and only the very best reached 16 1/2c. We place the decline in price at 1 1/2c. per pound compared with prices paid last month. Milk Cows have been a little more in demand, and the supply quite enough for good trade. Prices have looked up a little, and fresh cows sell quickly. Old, half-milked cows are not wanted in our market, and seldom bring more than \$50 each. Common cows have sold in lots of 4 and 5 each to the city milkmen for \$70 to \$75 each. Good cows bring \$80 or more, if "fancy." Veal Calves.—We see but little good veal in market, but plenty of calves, grass-fed and thin, which owners call veal, but it hardly deserves the name. A decline in beef always affects the price of other meats, and generally depresses the market. Sales are made at low figures. Grass-fed calves range from 4c. to 5c. per pound, while the few really fat, fresh milk calves went quickly at 11c. to 12c., and if very extra 13c. per pound. "Hog dressed" are coming in quite plenty, and sell from 15c. @ 19c. per pound. Sheep.—The receipts still keep in excess of demand, and prices are low. We notice but little change in either the state of trade or prices paid; perhaps the quality is a little better. We quote very thin sheep as selling for 3 1/2 and 4c.; medium 5c., and good 6c. to 6 1/2c.; lambs 6c. @ 7 1/2c., if very extra 8c. per pound. Swine.—The supply has not been regular, and prices have varied somewhat. The "run" is light for the season, caused, it is said, by the early cold weather at the West, enabling western packers to begin operations sooner. Prices ranged, Nov. 9th, 12 1/2c. @ 13c. for western dressed, and 14c. @ 15c. for home dressed. Live hogs sell from 9 1/2c. @ 10c. per pound.

Cows for Dairy Use.—A man who thinks of going into the "dairy business" asks, "Had I better buy cows at \$40 a head, or calves at \$3 to \$5, and raise the cows?"—We would buy cows one at a time, looking well to both quantity and quality of milk, taking ocular demonstration of both several times. If an average cow is worth \$40, a good one is worth \$50, and an extra one \$100. The average cow gives 10 quarts of milk a day, the good cow 16 to 18 quarts, the extra cow 20 to 25 quarts, and the butter increases too, but hardly in a similar ratio. Unless a man breeds his own heifers, or knows all about those he raises, he had better buy cows.

Home-Made Tar.—Mr. N. J. Shepherd, Lebanon, Ill., says: "Procure some good fat pine, and cut in small pieces; fill a large kettle that will hold at least 15 gallons. Turn the kettle bottom upwards on a large stone, place sods around it, leaving a small place for the tar to run out, and put a dish under to catch it. Then build a fire on top of the kettle to try out the tar, and if the wood is good you will have at least from 4 to 6 quarts.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Postage 12 Cents a Year in Advance.—The postage on the American Agriculturist anywhere in the United States and Territories, paid in advance, is 3 cents a quarter, 12 cents a year. If not paid in advance, twice these rates may be charged.

How to Remit.—Checks on New York Banks or Bankers are best for large sums; made payable to the order of Orange Judd & Co.

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect Oct. 1, 1863, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the Registry fee, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money, and seal the letter in the presence of the postmaster, and take his receipt for it. Letters thus sent to us are at our risk.

Bound Copies of this Volume will be ready this month. Price, \$2, at our office; or \$2.50 each, if sent by mail. Any of the previous twelve volumes (16 to 27) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style at 75 cents per vol., (50 cents extra, if returned by mail.) Missing numbers supplied at 125 cents each.

Save The Index Sheet, which is put loosely in this number, so that it can be bound or stitched at the beginning of the volume without cutting the thread.

Clubs can at any time be increased by remitting for each addition the price paid by the original members, if the subscriptions all date at the same starting point. The back numbers will, of course, be sent to added names.

Please Speak of our German Edition.—This has all the principal articles and engravings of the English edition, besides a Special German Department, by Hon. Frederick Mönch, a practical cultivator in Missouri. This paper is useful to the great number of German-speaking cultivators of the country, and especially so to the scores of thousands of new comers from Fatherland. Terms the same as for the English edition. Clubs may consist of either edition, or partly of both.

Sundry Humbugs.—Mr. J. Arthurs Murphy says our reporter did him injustice in the reference to his circular in this column in August last, and that he is doing a legitimate business, viz., that of collecting lists of traders, manufacturers, etc., for the use of merchants and other business men. T. F. Woods, Vernon, N. Y., is bothering people with his circulars offering fac simile U. S. Treasury Notes, and an Orotide Watch for \$5; also, sundry books—"Seat".... The U. S. Treasury Note Swindlers have an ingenious dodge to avoid arrest. The circulars are so worded as to make the recipient think he is to get very perfect counterfeit money, whereas a careful examination will show that they offer only a fac simile, which is really only a small photographic picture of the notes, without the Treasurer's signature. This is worthless as money, of course, but they find plenty of customers who send \$5 to \$15 a piece. These hope to get counterfeit money to circulate, and we have no pity for them, badly as we esteem the villains who do the swindling. Among these swindlers are the pretended firm of Noyes & Co., who have several modes of operation. One is, to excite faith on the part of their dupes by first sending a blank to be signed, pledging him not to expose the said Noyes & Co. if they will deal with him.... One of J. M. Blake & Co.'s cheating circulars we printed last month. A multitude of similar ones have come to hand—also an advertisement by them of an alleged Spanish Lottery, offering prizes of \$7 to \$7,777.00 for 10 cts. To make this pay, there must be more fools than we have yet dreamed of—but we suppose the so-called J. M. Blake & Co. know, as they have been so long in the swindling business under different names... Wogan & Co., were shown up by us last month. They must have sent out an immense number of their circulars, judging from the great number forwarded to us. One of their schemes is the "fac simile" U. S. Treasury Notes, de-

scribed above... A "Friend" from the country, just to gratify his curiosity, allowed himself to be coaxed into one of the Oroides, *alias* Envelope prize, *alias* Swindling Shops in N. Y., and sends us a full account of the various efforts made by stool pigeons, etc., to get his money. We have not room for his letter. We have gone through the same operation so often that most of the swindlers know us under every disguise, and refuse to operate with us, and so have spoiled one of our amusements. Every Oroides Watch Shop offering envelope tickets is a manifest humbug, and whoever pays a dollar, or a dime, will be swindled before he gets through.... Various other Hamburgs, too numerous to be noticed this month, are in our hands. We may indicate the names of some of them: W. H. Clement & Co., *alias* Willis (U. S. Treasury Notes, etc.); Sundry cheap Sewing Machines, all too cheap for anybody to lose their money on; Barclay & Co. (Spurious Money); Sundry "Medical" Books; Michelin & Co., noticed last month; John E. Marion & Co., vile books and pictures, with Oroides Watches, spurious money, etc.; Sundry Hamburg "Doctors," and their books and periodicals, in New York, and at Albany, etc.; so-called "Artists' Associations," existing only on paper, or in circulars; Williamsburg dry goods swindlers (Chapman & Kohl, etc.), who get poor women's money; a pretended weekly journal, offered for a year, with an envelope ticket for an article worth \$18—all for \$1, to greenhorns! Another monthly paper for \$1, with cash premiums thrown in, amounting to from \$10 to \$500 each; a consumptive cure, of Sayre & Co., 210 Broadway, which happens to be the center of Fulton Street—there is no 210 Broadway; Daily & Co., Spurious Money. A lady, "too poor to take the *Agriculturist*," loses \$3 in getting a "music box" in Liberty Street, which proved to be a month organ, costing a sixpence. (She should apply for remedy to the journal which advertised it.) We have a lot of others, but must stop now.... Our most efficient ally in protecting the people against Hamburgs, is Mr. James Gayler, Special U. S. Mail Agent, and editor of *The Mail*, a first-rate monthly journal, published at the New York Post-office, at \$1 a year, and very useful to all Post-masters, and others having much mail business. *The Mail* shows up Hamburgs, and Mr. Gayler constantly keeps back all the letters to swindlers, that the law will allow him to retain, and return to the writers. The swindlers tried to blackmail him into silence recently, by hundred-dollar subscriptions to his paper, but they "caught a Tartar," and the Avondale Sufferers got the money. We hope they will make good use of their hundred copies of *The Mail*.

Suicide.—On Thursday, Nov. 11th, the N. Y. Fruit Grower's Club committed premeditated suicide. It has passed into "airy nothing," and has given up its "local habitation and a name." Want of sympathy from the cold world and a plentiful lack of cash in its treasury were the predisposing causes.

Maple Shade Flock.—John D. Wing, Esq., Washington, Dutchess Co., N. Y., has sold his entire flock of justly celebrated *Thorough-bred Cotswold Sheep*, all of which were imported or bred by him directly from imported stock, to Mr. L. A. Chase, one of the proprietors of the *American Agriculturist*.

Large Seckels.—D. K. Underwood, Adirondack, Mich., sent us specimens of as large Seckel pears as we ever saw. They had been kept rather too long to allow us to judge of their quality, but for size and beauty they were remarkable.

The Utter Apple.—Mr. T. D. Plumb, of Madison, Wis., sends the Utter apple which he says "is becoming very popular in the North-west." We do not wonder at it if the fruit is always as fair and handsome as those sent. "Season, according to location, from Nov. 1 to February 1, a regular bearer and hardy in the North-west." The flesh is very white, and quality good.

Send as a Holiday Present, to a country or other friend, a year's subscription to the *Agriculturist*. It will be useful, and will remind the recipient of the giver, every time it comes to hand. When desired, in such cases, the Publishers enclose in the first number an office receipt, marking on it the name of the donor.

The Dexter Circular.—This is not a *Circular*, nor any mechanical appliance, but a printed "circular" containing a few simple and useful hints.

The Green-House as a Winter Garden, by F. E. Field, with a preface by W. C. Bryant. New York: G. P. Putnam & Son. This is a little Manual by an English amateur, and is intended for those who manage a small green-house by themselves. The work is pleasantly and plainly written, but it is too meagre in its details. The whole story of the green-house and descrip-

tion of the selection of plants for winter flowering, being told in 86 pages of large type. We should hardly consider a winter garden, even the smallest as well stocked if it did not contain Carnations, Bouvardias, and many other things which the author omits, and we should leave out of a small collection, several which he includes. There are, however, many suggestions which will be useful to the amateur in this country, while the particular instructions as to mixtures of soils are quite unsuited to our cultivators who succeed without them.

Pear Named.—"G. S. C." From the outline and description we judge your pear to be the Sheldon. If this be the case you will search long to find a better one.

"Mauna Seed."—L. J. Green, Fairbault Co., Minn. The specimen sent is one of the kinds of Millet, and is sometimes grown as a forage plant.

A Good Cement.—Mr. J. Shepherd says: "Mix a small quantity of plaster and alum with water, and use in a liquid state. It sets very hard, and is especially good for fixing the brass caps to lamps."

Dewberry Briars.—"G. H. Q." asks how he can get rid of dewberry briars on land too stony to plow. We do not know of any better way than to cut them with a brush scythe and pasture the land with sheep. If any of our readers know of a better method, we should be glad to hear from them.

The Catawba "Buried."—At a recent meeting of the Alton, Ill., Horticultural Society, it was "Resolved, That with feelings of deep regret we consign our old friend the Catawba Grape-Vine to the tomb. Long persistence in bad habits has ruined its former character."—A novel way of disposing of a grape-vine. Why did they not send to Chicago and get a divorce? Others may like the Catawba if the Altonians do not.

Twelve Thousand Dollars' Worth of Engravings, at least, will be given in the *Agriculturist* during 1870. To obtain neatly printed copies of all these will cost only \$1.50, or less to clubs, with all the reading matter thrown in.

Fruit in Washington Co., Ill.—The Secretary of the Richview Horticultural Society, Mr. O. C. Barber, sends a statement which shows the amount of fruit cultivated near, and shipped from, one station on the Illinois Central R. R. In the immediate vicinity of Richview are planted, Peach trees, 95,000; Apple, 20,000; Pear, 7,500; Cherry, 2,500; Quince, 3,000; Grape, 16,500; Gooseberry, 1,800; Currant, 2,000; Blackberry, 10,000; Raspberry, 20,000; acres of Strawberries, 21. Of the above number of trees and plants, the great majority is not yet in bearing condition. The statistical committee report that sales of peaches have reached 30,000 boxes; apples 1,000 barrels; pears 1,000 boxes; cherries 500 cases; strawberries, 22,000 quarts; tomatoes 10,000 boxes, besides large quantities of melons, squashes, cucumbers, and other garden productions.

Wheat or Corn, for Hog Feed?—"H. A. W.," writing from Ellington, Ill., says: "At this time (September 3) in the Quincy market, wheat is worth from 75 cents to \$1 per bushel; corn firm at 75 cents per bushel; potatoes 49 cents per bushel; pork is about \$9.00 per hundred, gross," and asks: "Which will it pay best to fatten our hogs upon? And in what shape shall we feed it to get the best results?" *Ans.* Wheat is richer than corn in starch and albuminous matter; corn is richer in oil; your choice lies between the two, for potatoes at 49 cents cannot compete. Judging from the analyses quoted by Johnson in "How Crops Grow," that we should decidedly prefer wheat at the price named, and besides we believe that, while the corn would need to be ground and cooked to give the best results in feeding, the wheat might simply be soaked and boiled. The amount of boiling it would need would be shown by experiment. No kernels should pass the animals undigested.

Connecticut State Poultry Society.—The first show of this Society took place at New Haven, on the 9th and 10th ult., and from the good quality of many of the fowls and the enthusiasm manifested, may be called a success. There were about 250 entries, comprising nearly a thousand specimens, comparatively few of which came up to the recognized standard of excellence. They were mostly from residents of the State. Much experience has been gained, and another exhibition will show the good results. The largest exhibitors were Messrs. John G. North, of New Haven, who had a varied collection, a large portion being from the recent sale of John B. Gough's stock, C. P. Nettleton, of Birmingham,

J. S. Bestor, of Hartford, G. W. Bradley & Son, of Hamden, H. H. Snow, and E. B. Dibble, of New Haven. In the class of Asiatic fowls, the largest display was of light Brahmas, some of which were of great excellence. Two coops of Buff Cochins, said to be from the Cooper (\$315) trio, promise well. Philander Williams, of Taunton, Mass., had a fine coop of Dark Brahmas. There were fine specimens of the Creve Coeurs from Albert Leeds of New London, and others, Wondans from Nettleton, and a fair show of games. In White Leghorns, the competition was spirited, but no single coop was up to the standard laid down by the *Agriculturist*, last March. Of ornamental fowls, the largest display was of Silver Spangled Hamburgs; many birds, however, should have been disqualified according to established rules. A crested turkey attracted much attention, and far excels in size of crest one that made such a stir among poultry fanciers in England last season. We regret that but three judges were selected to award the premiums to so large a number of fowls, but suppose it was unavoidable; and congratulating the Society upon its success, trust it may be encouraged to renewed efforts, and achieve great results.

Why so much White?—A Canadian asks us "Why it is that farmers almost invariably paint their houses white? In riding through a country covered with snow, how the eye wearies of the white and longs for some relief. Why not in such a white country paint houses drab or brown, or anything but white." We also ask, why not? It is some consolation to know that this fashion exists in Canada. It seems to be an American peculiarity. Perhaps it is owing to the dry, stimulating atmosphere, and to our go-ahead disposition that inclines us to take light and hopeful views of life. Our correspondent says, we never see white houses in any of the works of great Italian painters. This is probably true, and while we would personally, never paint a house white, yet we would rather be an American than an Italian.

The Davis' Corn Crib Patent.—The following letter of Mr. P. Davis, of Newport News, Va., explains itself: "I have good reason to believe that many think that my corn crib (illustrated in your paper of April last) is or is to be patented. Will you please inform the people that it is not, and will not be patented, and that I have never intended to make anything out of it except a good corn crib for myself while I have use for one. This fall, on the 13th of Oct., I had my crib full of corn all husked, and it is now nice and dry. I will warrant that not an ear of it spoils by being put in too soon, and that not a rat can be found in the crib."

Milking Machines.—John W. Mills, Mass. Ag. College, asks: "Will you give me your opinion of Milking Machines, in the *Agriculturist*?" The best is doubtless a stout calf—which squeezes and sucks the teat, and occasionally butts. Next best is the human hand; probably the female hand, as this is managed with force enough, gentleness and patience. Men make very good milkers if they try. As to mechanical contrivances for milking we have seen several, and some would milk apparently pretty well, but we never yet have had any evidence that they could be long used with safety to the cows, with economy, or without rapidly drying up the flow of milk. We have sought information diligently and have repeatedly published similar statements to this.

Gophers and Hedges.—"C. M. M.," College Springs, Iowa, finds gophers very destructive to Osage Orange hedges, and wishes to know if there is any hedge plant that will not be attacked by these animals. Who will answer?

Tar on Peach Trees.—A correspondent at Bartlett, Tenn., informs us that he followed the advice of "Ten Acres Enough," and covered his peach trees for a few inches above the ground with tar to keep off the borer. Result—a lot of very good fire-wood.

Huckleberry Seed.—"H. B.," Ottawa, Ill. But few have tried raising Huckleberries from seed. Fuller recommends to mix the seed with sand, and put it in a pot or box and bury in the ground all winter; in spring sow sand and all on a well prepared bed.

Osage Orange Hedge.—"S. S. B.," Blair Co., Pa. One-year-old plants are set in the spring, and it takes about four years to get a good hedge. It will do well on good grain soil. If the soil is poor or the situation bleak, the Honey Locust will succeed better.

A Winter in Florida, by Ledyard Bill.—Those contemplating a visit to Florida, whether for health or with a view to making a settlement, will find much useful and interesting information in this pleasant work. N. Y.: Wood & Holbrook. Price, \$1.25, by mail.

Farm Wages must Come Down.—

"The laborer is worthy of his hire," and we are decidedly in favor of paying all good, faithful workers the highest wages that can possibly be afforded. But the employer is equally worthy of his hire. The farm can not pay beyond a reasonable per centage of its products for workmen. The cost of freightage and other marketing expenses is about the same for wheat at 75c. per bushel as for that sold at \$1.50. But making no allowance for this, let us reckon the wages of laborers in wheat, or other produce, which he must buy for his family. Suppose we put the wages of a good workman at four bushels of wheat per week with board, or 5½ bushels without board. This, with wheat at \$1.50 per bushel, is \$25, or \$34.37 per month, if the employer sells his wheat and pays money. Is it just that he should pay the same money wages when his wheat brings only 75c.? The plain truth is, he cannot afford it. He cannot give 8 or 11 bushels of wheat for a week's work. If the laborer could feed his family two years ago on four bushels of wheat per week, he can get along on less than double that quantity now, while the employer is straightened for the means to pay interest, purchase machinery or implements, stock, etc. If laborers do not appreciate these facts, and moderate their demands accordingly, farmers will, from absolute necessity, be compelled to shorten sail, and a large number of laborers will be thrown out of employment. Every farmer will, of course, do the best he can to retain his well-trying men, and to keep some improvements going on. By the way, we would like to receive from some of our readers, in different parts of the country, statements as to the number of bushels of wheat, and of corn also, that have been equivalent to the average wages of farm hands, with and without board, during each of the years 1865, 1867 and 1869—we refer to men employed by the month for the entire year.

The American Horticultural Annual.—

This Year-Book, ready early the present month, presents, in a condensed form, a great amount of information useful to the professional horticulturist or to the amateur grower of fruits, flowers, and vegetables. Dr. Warder furnishes an account of New Apples, giving especial attention to the Crabs, which are now assuming so much importance to our North-western orchardists. Mr. Barry has an article on the New Pears. F. R. Elliott sums up the New Peaches and Cherries, upon which fruits he is our best authority. A. S. Fuller gives an account of the Small Fruits, and as he is, as usual, severe on nominal varieties, his article will not be relished by the growers of such. Mr. Hoopes gives a description of some new Evergreens. Mr. W. G. Comstock, long known as one of our most reliable seed-growers, has an article on Seed Raising. New varieties of Grapes are described, and a distinguished amateur presents an article on Inarching the Grape. New Green-House and Bedding Plants are treated of by Peter Henderson, while the Annuals are discussed by James Vick. Notes upon New Vegetables are furnished by Gregory and others. Besides these there is a large amount of editorial work, including references to the illustrations that have appeared in the various journals, List of Nurserymen and other dealers, Books of the Year, etc., etc. The illustrations are prepared with great care, and the volume is a handsome as well as a useful one. Price, by mail, 50c. paper, 75c. in boards.

Terrible Deaths and great destruction of property are occurring weekly, if not daily, in our country from the use of the various coal or kerosene oils. The inferior oils are so much cheaper, that they are used ten times as much as are the safe kinds. Accidents like the breaking of lamps, or upsetting them, or the firing of the gases, will occur among servants and children, and even with the greatest care of grown people. A sudden covering of the flame with a large cloth will frequently extinguish it, but most persons are too nervous or too frightened to do this in time. The only positive safety is in using the non-explosive kinds like the genuine "Pratt's Astral Oil." (It is offered as one of our premiums, No. 75). One of our associates had a glass wall-lamp, filled with this oil, fall from its fastenings last week. It broke, and the oil, with the burning wick in it, spread over the floor, but no burning of the oil occurred beyond the wick. He would not use any other oil now if this cost \$5 a gallon—nor would we.

Humbag Advertisements in Agricultural Papers.—Some of our correspondents have sent us advertisements of Gift Enterprises and the like, cut from the columns of other papers. We much regret that any agricultural paper should publish such things; but would it not have more effect to express your disapprobation to the papers in which they appear, than to us? Whatever we say might have little influence with them; a word now and then from their readers would.

To Thee, Reader,

And not to Somebody Else.



Thy Subscription Expires NOW,

(Probably.)



We every year receive severe complaints from subscribers because we stop their papers on expiration of subscription.—They say: "Don't you know us well enough as old subscribers, not to stop the paper, because we didn't happen to pay up on the instant?"—Hold good friends! If you send a dollar's worth of dry goods, or farm produce, or a ream of paper to a man, you don't, when that is gone, send another dollar's worth, until it is ordered. Neither do we. We can not say that every one wants the paper continued, any way. It is impracticable to write and tell every subscriber when his time is up. This would cost thousands of dollars. (We furnish the paper now for less than it costs to make it, and every penny added to the cost of supplying it is a heavy matter.) Our personal friends suffer equally with others, because clerks must necessarily be employed to make up the mail lists, and they must work by the general rule, to enter in the mail books only the names of those paid up.

To Start the Year Square, we say to the Reader, it is very probable that his subscription expires NOW—with this last number of the volume. Those who have recently renewed will of course find the paper coming on regularly.

We cordially invite every present subscriber to renew NOW. We know we shall make the paper worthy of continued patronage, and it will help us much if renewals and new names are sent in at once—the first week in December—so that we can get them all well arranged in next year's books, ready for mailing the next number before the Holidays. It will take no more time to write the few words required to order a subscription continued now, than it will to-morrow or next week, when it may be forgotten or overlooked.

So Please Renew NOW.

Special Premium.—The Eumelan

Grape.—This remarkable grape is now attracting much attention, being a beautiful black grape of the first quality, and ripening some time before the Delaware. It has already been planted in many different sections of the country, from the Atlantic to west of the Mississippi, and the promises of its success are most flattering. It has proved, generally, vigorous and hardy. The quality of the fruit is, in our judgment, as good as any variety with which we are familiar, except it be the Iona. It has taken the highest premium for quality at many exhibitions this fall. We are convinced that this grape is worthy of general trial, and we shall take much interest in seeing its true merits developed. We have made arrangements with Messrs. Hasbrouck & Bushnell, of Iona, near Peekskill, N. Y., who have the original stock of the vines, and a very superior stock of the young plants, to furnish us a limited number of No. 1, and extra vines for the purpose of offering them as premiums, and we give our subscribers the benefit of our large purchase by furnishing the vines as premiums at the lowest rate per thousand. We furnish the *American Agriculturist*, with Eumelan vines, as follows:

1 copy for one year and 1 No. 1. Eumelan vine for	\$2.50
4 copies " " " 4 " " " " " "	9.00
10 " " " " 10 " " " " " "	22.00
20 " " " " 20 " " " " " "	40.00

We will furnish an *Extra quality of Vine*, as follows:

1 copy for one year and 1 Extra Eumelan vine for	\$3.25
4 copies " " " 4 " " " " " "	12.00
10 " " " " 10 " " " " " "	29.50
20 " " " " 20 " " " " " "	55.00

Or we will give

One No. 1 Eumelan vine for 4 subscribers at \$1.50 each.	
Or one Extra " " " 6 " " " 1.50 "	

These vines will be of really No. 1 and extra quality, and will be sent by mail, postage paid, or boxed, by express, the receiver paying express charges only. Orders received too late for sending this fall will be entered, and the vines forwarded as soon as it is safe in the spring.

How does the Water get into Tiles?

—It gets in through the joints. Just lay twenty or thirty rods of tiles and make the joints as tight as possible, then let a stream of water into the tiles and dam it up at the lower end, and see how fast the water will flow out from the joints between the tiles. Now, when the tiles are laid in the ground and they are surrounded with water, the water will rush into the tiles through the joints nearly or quite as fast as the water in the other case would rush out of them. But, perhaps, you mean to ask how the water that is in the land gets to the underdrain. In sandy or gravelly land it gradually soaks through the particles of soil for several rods on each side of the drain. But to many people it is a mystery how water can soak through a tenacious clay three or four feet deep to the tiles. Wet clay as it dries, contracts, and seams or pores are formed. You will observe this on a piece of wet clay land. In the dry weather of summer it splits open into cracks, not unfrequently an inch wide. Well, when you put tiles into such a soil, the water drains away for a few inches on the bottom and sides of the ditch, and as the land becomes dry it cracks open, and the water from the adjoining land flows into these cracks and through them to the tiles. As more land dries more cracks are formed, and so on until the whole soil, if the drains are sufficiently numerous, becomes full of these small fissures. When these are once formed, they will always continue open, and the water will pass off rapidly. We have heard old farmers declare that they knew water could not get through wet clay land, because they had seen a hole made by the foot of an ox not a yard from an open ditch, which would and did hold water for several weeks, or until it was evaporated. The explanation of this is simple enough. Notwithstanding the ditch, the land was saturated with water from the acres of land on each side of it. Had a couple of deep ditches been cut, say ten rods apart, the land between the ditches would not hold water, at least not after a few months, when the soil had once become dry from below, and full of minute fissures or cracks.

"What Do You Mean by Fallowing Land?"

—Generally, we mean plowing land, and letting it lie a season without sowing a crop; in the meantime harrowing, cultivating, plowing, and otherwise stirring the soil, for the purpose of mellowing it and destroying weeds. An ordinary summer-fallow is a piece of sward land, plowed in May, or early in June, and again plowed in July, and after each plowing the land is harrowed, and rolled and cultivated at intervals of a few days or weeks, according to its condition; and then, in September, the land is plowed again, harrowed, and drilled in with wheat. Another kind of summer-fallow is to turn over a clover sod in June, and sow it to wheat in September, without any more plowing, merely working the surface with a cultivator, harrow, etc., during the summer, to keep down the weeds. Of late years, this

has become a very common method of summer-fallowing for wheat. What "Walks and Talks" calls "Fall Fallowing," is plowing a piece of sod land in July or August, harrowing and working it as you would if it were to be sown with winter wheat, and then *not* sowing it; but continue to cultivate or plow it in the fall, and then sow it to barley, or wheat, or oats, in the spring. The advantages he claims for the plan are, that you work the land quite as well as if it was summer-fallowed, that it is exposed for a much longer time to the ameliorating influences of the sun, air, and frost, and that you lose no crop except grass in the fall.

Bitter Butter.—"G. W. S.," of De Kalb Co., Ill., writes: "I have just finished churning for my wife, and the butter churned is quite bitter; the cream was bitter as well as the butter. She keeps the milk in the cellar. When the cream is skimmed it is sweet. She has to set it by the stove in order to become sour, and as it becomes sour it also becomes bitter. Can you tell the cause and remedy?" In all probability the cream stood too long before it was churned. At this season it is not worth while to keep milk in cold cellars. The cream rises much better if moderately warm; a temperature of 60° is about right. Keep the cream-pot covered with a towel, and at about the same temperature. Stir the cream as often as new is added. Keep both milk and cream where they will not absorb kitchen or other odors, especially smoke of wood fires or of burning grease, and churn as often as once a week. See that the cows have salt and do not eat decayed turnips, turnip leaves, or cabbages. Sound turnips and cabbages impart very little flavor, especially if fed at milking time.

Asking Questions.—"J. H. R.," writes: "I see you answered some questions in 'Walks and Talks,' and so I thought I would ask a few. I suppose you will laugh at the idea of a boy fifteen years old writing to you."—Laugh at you! Why should we? A question, asked in a respectful manner, and with a sincere desire for information, is always complimentary. Nothing pleases us better than to be asked questions, even from the old folks; but it is our delight to answer a boy. His questions are answered elsewhere.

Hedging and Hedging Plants in the Southern States, by Thomas Affleck. This little work was prepared by Mr. Affleck just before his death, and is now published by E. H. Cushing, Houston, Texas. It is mainly devoted to a discussion of those plants which are peculiarly adapted to Texas and other Southern States, and while it will prove useful to those who live in those warm regions, it contains but little that is applicable to severer climates. The Cherokee Rose is the author's favorite hedge plant, of which he gives a fuller account than we have seen elsewhere.

Vermont Dairymen's Association.

—This Society announces its annual meeting for about the third week in January. Dr. Loring and Mr. X. A. Willard will, of course, be there. Particulars may be learned from Mr. O. S. Bliss, the corresponding secretary, whose address is Georgia, Vt.

A Work on Peach Culture.

—The United States is the great peach country of the world, and yet we have no good treatise on the cultivation of the peach. We are gratified to announce that we shall soon issue a very complete Peach Culturist, by an experienced planter in the peach regions of Delaware. The work is remarkably full in all the details of peach orcharding, and gives all the instructions for its successful prosecution that can be conveyed in a book form.

New York State Poultry Society.

—This Society holds its second exhibition at the Empire Skating Rink in New York City from the 1st to the 9th of December. D. E. Gavitt, of New York, is Secretary. The first show was the finest ever held in America, and we expect much from the second.

Steel Plows.

—A correspondent asks "What is the difference between the common metal plow and the cast-steel plow spoken of in the 'Walks and Talks'?" The only difference is, that the one is made of cast-iron, and the other of cast-steel. The Remington plows are made of rolled cast-steel. The Collins' plows are also made of cast-steel, but the metal is poured into a mould in the same way that ordinary cast-iron plows are made, and hence they are called "cast cast-steel" plows. Cast-steel is malleable, cast-iron is not, hence one of the advantages of the steel plow is, that the points can be sharpened by a blacksmith.

Bulls in Harness.

—Our article last month on working bulls occupied so much space, that we could not give such credit as we wished, to correspondents who have kindly furnished us with facts. Mr. A. T. Davis, of Maine, wrote thus: "I have a good-

sized Ayrshire bull which I work in harness daily, using a single yoke instead of a collar. I have my work harness made to work double or single. I use for the bull one of the saddles from my harness. This holds up the shafts of the cart, and enables the bull to hold back going down hill. The chain-traces attached to the yoke instead of to the harness, as in the case of a horse. The reins pass under the yoke, and attached to a ring in his nose. By this arrangement I am enabled to use him in an ordinary horse cart, without change. I can use the bull or a horse at option, either in cart or sled. The shafts project forward, under the yoke, a short distance, so as not to catch between the bow and his neck. In fact, I use him about the same as you would a horse, except that he works in a yoke instead of a collar." The head-yoke illustrated was copied from a sketch sent by John Joeckel, of Orangeville, Iowa, a German subscriber, who gave a description of it, and his method of using it.

Cheese.—A \$100 Premium.

—The American Dairymen's Association offers a premium of \$100.00 for the best original essay upon "The claims of cheese as a wholesome, nutritious and economical article of food." Competing essays must be sent to the Secretary, Gardner B. Weeks, Syracuse, by the 20th of December. The award will be made at the Annual Meeting of the Association, January 12th and 13th, at Utica, N. Y.

Ashes and Potashes.

—The disappearance of potashes and of ashes, both leached and unleached, from the common market, and of potasheries from the land, was the subject of a "Basket item" last Sept., in which we quoted our friend Titus Oaks, Esq., whom we regard as high authority upon a large range of practical subjects, a little inaccurately. This has elicited the following letter from him: "In getting information from Titus Oaks in regard to the strength and weight of house or wood-ashes, you mistook him in regard to the last potash factory being given up; and as you sometimes quote him as authority, please make a correction. He intended to be understood that the last one with which he had had dealings in this State was given up. There are some half dozen very small makers left in the State, some of which purchase ashes and leach out the potash chiefly for the sake of the leached ashes for manure. Why will not some of you scientific men tell us what there is in leached wood ashes so valuable in comparison with unleached? Perhaps a substitute may be found. Wood-ashes, and potash from them, will be almost unknown as articles of commerce in a few years. There is only about one-eighth ($\frac{1}{8}$) as much sold in New York as there was twenty-five years ago, and only 1-500 part as much produced in this State. (Mr. Clement Guion, who has been in the New York Potash Inspection office for the last twenty-five years, thinks only 1-1000 as much in the State.) Almost any close observer will tell you that leached ashes have a value far beyond what agricultural chemists prize them at.

Barberries.—N. C. Neice, Tama Co., Iowa.

The specimens sent are both European Barberries, but one is the purple-leaved variety. The common Barberry used for hedges is of foreign origin. There is a native species in the Southern Mountains, but we have never seen it in cultivation. The Barberry makes a beautiful hedge, but we have never seen one that we thought cattle-proof in the western sense. As to the effect on grain, it is suspected that the shrub nourishes one form of the smut that affects grain, but this is not proven.

Scuppernon Grape.—Messrs. Thigpen & Dancy

sent us a box of the Scuppernon grapes which reached us in better order than any we have heretofore had. We are asked for an opinion on its merits. Were it a question between grapes and no grapes, we should say, give us plenty of the Scuppernon, but it cannot compare, in our judgment, with the Delaware, Iowa, Emmanuel, Salem, Diana, and many others. Were we to see it as it ripened upon the vines, we might place a higher estimate upon it. The productiveness of the variety is remarkable. The specimens came from two vines which yielded 2400 lbs. Southern horticulturists, whose opinion we respect, consider the Scuppernon of greater value to the South than any other variety.

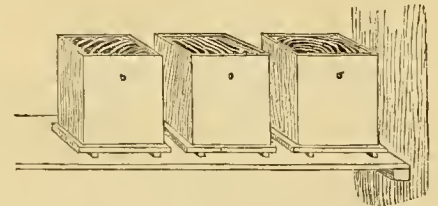
Good Pay may be realized by many thou-

sands of persons this month by making up lists of subscribers for our premiums. This has been done for many years—by many more last year than ever before; and the number may be largely increased this year. The people all need this journal, and they will take it, if some one will show it and explain its value, and our premiums will pay those who take this little trouble. We want more Boys and Girls employed in this work. It will give them business tact of even more value than the premium they get. Canvassing is appropriate work for ladies, and many of them are among our best and most successful can-

vassers. Our premiums are legitimate pay offered for services rendered. Most publishers, who formerly gave money commissions, are now adopting our premium plans. With large experience, we have reduced this to a system, and can give better pay in this form than others.

Bee Notes.—By M. Quinoy.

Apiary for December.—Let the bees stand out as long as there is any probability of fine weather. Move on a cold day as they will be far more quiet than on a warm one. If bees are expected to winter in the open air, the stocks must be in prime order—such as would do well almost anywhere. Contract the passages to keep out mice, leaving room only for a single bee. I am convinced of the utility of Mr. Coe's method of ventilation. Make a hole through the bottom-board, say two inches square, directly under the centre of the hive, and cover it on the under side with wire-cloth so bent as to make a sort of dish under the hole. This will keep out mice and prevent the passage from filling up with dead bees. To secure a slight draft through the hive, open several holes in the top, fill the super or cover with hay or straw, and set it over the holes. The hay will absorb the greater part of the moisture and prevent the animal heat from passing off too freely. There should also be two or three inch holes in the side of the cover to let off any accumulation of vapor. But if second or third-rate stocks are to be wintered, it must be with some kind of protection. Housing is perhaps best. Fifty or sixty hives



HIVES ARRANGED FOR WINTER.

in one room of suitable size will generate sufficient heat to carry colonies through safely, that would have perished in the open air. Besides, they consume less honey. A farmer knows well enough that a horse or ox warmly housed will eat enough less to pay for stabling, and it is quite as true of bees as cattle. It is doubtful, however, if a room that freezes with the bees in it, is any better than the open air. If the hives are stored in a cellar it must be dry. If a hundred stocks are together, and the temperature, which should be about 40 degrees, gets too high, snow may be carried in to advantage. Box hives in the house should have holes open in the top—ten or a dozen inch holes are none too many—be turned over on a couple of strips of wood, an inch by ten to keep the hive from the shelf on which they stand, and secure a circulation of air. The cut represents hives on a shelf, bottom up as described, and arranged for winter. The room should be warm and perfectly dark. If the faintest ray of light enters, anywhere, the bees will either be found scattered an inch deep and dead on the floor, or gone, having escaped through the aperture and become lost. Darkness is cheap, and where it is so necessary, better have enough of it. A few hives may be buried to advantage. Dig a trench 8 or 10 inches deep, strew the bottom with straw to the depth of 4 inches, lay down a couple of pieces of scantling, and on these set the hives right side up, 3 inches apart, with the holes in the top open. Then pack closely with plenty of straw, and cover entirely with earth. But if more than eight are thus buried together, an opening must be left for ventilation. The great value of straw as an absorbent of moisture may be utilized by making straw hives. Such need no opening in the top to allow moisture to escape, and thus the great advantage of retaining all the heat is secured. It is not yet too late to make them this fall, and transfer into them for outdoor wintering. Hives made of straw may be entirely closed without harm, but if a box hive is so shut up, the moisture will accumulate on the inside and run down and freeze at the openings until they are all closed and the bees smothered. I once thought that flags would do as well as straw, but find that they shrink too much. Wood covered with straw, is much better than wood alone. If bees are to be transferred to them, do it in a dark room—or as dark as may be, and leave light enough to work, as they will fly less. If any need feeding yet, let it be done in a warm dark room. A little may be given by turning the hive over and laying combs containing honey or pure rock candy syrup across the combs. We have recently learned the interesting and remarkable fact that the principal food of "southern bees, during the winter is pollen; but our northern bees must have honey or syrup." Feeding is so easy, and the loss from starvation is certain to be so great this winter, that I hope no bee-keeper will let his stock die through carelessness.

Tim Bunker on Cape Cod and Cranberries.

"And when you have taken the life all out of your land and got it so poor that nothing else will grow, then what will you do?" I asked.

"It is then just right for cranberries," said Gilbert. "You lay off the sand or gravel into rows eighteen inches apart, the rows running both ways, and plant the vines at the corners. We have tried seed sowing, but that is a very slow process. We have tried running the vines through a hay cutter, but that is not very satisfactory. The thing we have settled upon as the best, is planting the vines that are cut off at the surface of the ground. The planter takes three or four of the vines and with a dibble thrusts them down into the ground about four inches. The lower part of the vines are bent double, as they are pushed downward. The soil is pressed lightly about the vines. When a bog is just set it is a good plan to raise the water even with the surface for a day to settle the sand. This is better than to press the sand too hard. If the vines are planted in April or May it does not make so much difference about the sunshine. If later in the season it will be better to take cloudy days or late in the afternoon for planting."

"And is there any difference in the kind of vines you plant?" I asked.

"Yes," said uncle Gilbert, "there is as much difference in cranberries as there is in folks. Some are all leaves and vines and others run to fruit. The whole ground seems to be covered with cranberries in a good season. The large cherry and bell cranberries are the best. The bugle and small cherry are not desirable. Then it is better to select vines from patches that are known to bear well. Quite a large trade is carried on in the sale of vines for the purpose of stocking new plantations. They are sold for \$1.50 to \$2.50 per barrel, and it takes from 6 to 15 barrels to plant an acre according to the skill of the planter. Six are enough if they are planted right. Three or four stalks in a hill are just as good as a dozen. If you plant ever so many only a few will live and grow. With a small number of stalks they seem to start stronger and cover the ground sooner."

"How much cultivating do you give the vines?" I asked.

"Wal not much, if you have done the work thoroughly. The only object of cultivating is to keep down the weeds until the vines have a chance to cover the ground. This should be done with the hoe or the hands as is most convenient. A push hoe is a very handy thing to run between the rows."

"And how is it about the flowing?"

"There is quite a difference of practice among good growers in this respect. Some put the water on very soon after they get their crop off in the fall, and keep the bog covered two or three feet until the last of May. This is probably the best plan if it can be done. But a good many have not water enough to flow so deep, and they keep their patches about as wet as they can. If the bog is situated so that the water running through is subject to flood, great care must be taken to keep the vines so far under water that they will not be frozen into the ice. Great injury is often done in this way. The vines are torn out by the roots, and floated off. It is better not to have any water on the surface than to suffer this injury. Though flooding is essential to the largest success, there are a great many patches that raise fair crops that cannot be flowed."

"And when do you flow in summer?"

"Some times a frost threatens in June after the water has been drawn off. The vines that have been kept under water are quite tender and a slight frost will destroy the blossoms. Flowing for a night protects them. The fruit also is liable to be injured by frosts in September and October, and flowing is a complete protection. A single night's flowing on a ten acre bog would sometimes make a difference of thousands of dollars in the value of the crop. Frost-bitten cranberries will not bring more than half price. A neighbor had a ten acre patch caught in this way last season. On the 1st of September he had 500 bbls. of as nice looking cranberries as you ever laid eyes on. He delayed picking a week longer than he ought to, and lost 200 barrels, worth three thousand dollars. His bog was so situated that he could not flow at pleasure."

"And don't the vines ever get injured by the flooding?" I inquired.

"Yes, sometimes in summer there will come a heavy rain, and flood a piece that is not well drained, and scald the vines and spoil the crop. This shows the importance of good drainage."

"How long do you flow to kill worms?"

"Only a short time. One night will finish them. If you kept the water on long it would destroy the crop more than the worms would. For I think the fruit worm thins out the fruit, and what remains grows larger and we get as good a crop as we should if they did not trouble us. Then we have a vine worm about three-quarters of an inch long, of a bluish cast, with a black head. Flowing is a sure remedy for this and it destroys most of the fruit worms."

"How is it about growing cranberries on upland," I asked. "Will they do anything?"

"Just about," said Gilbert with a twinkle in his eye, "except bear fruit. We have tried it down here, and the vines grow and bear a little, but they don't pay for planting as a rule. You see the upland planting is generally advocated by men who have no good bogs, or by those who have plenty of vines to sell, or some ax to grind. The plant is at home only in sand, peat and water. Frogs will live on land for a time, but a dry spell brings them up all standin'. You must consult natur if you are gwine to do anything with cranberries."

"And when you have your crop raised, how do you gather them?" I inquired.

"We begin to pick as soon as the crop is well reddened, soon after the 1st of September. We seldom get any frosts down here before the last of the month, and that is one great advantage of our location. The sea breeze keeps off the early frosts. The picking is all done by hand. The cranberry rake has been tried, but it did so much damage to the vines, and gathered so much litter with the fruit, that it was given up. The cheapest kind of help is employed, and women and children flock to the cranberry meadows in the picking season ready for work. It takes about one overseer to thirty pickers, and the price paid for the labor is from 1½ to 2 cents a quart. It used to be one cent, but Cape Cod is not so far out of the world, but it feels the rise in prices. Some pick in boxes made of lath that hold a bushel, and which cost about 20 cents a piece, and others pick in four quart boxes. The overseer measures the fruit as it is brought in, and keeps account with the pickers. The fruit is cleaned with a lath sieve. This is found to be better than winnowing, as it guards the fruit against bruises. As soon as the fruit is dry it is put in barrels that hold 104 quarts, dry measure. They are made

by the Cape Cod Cranberry Association, and have their brand upon them, so that everybody knows just what he gets for a barrel. They cost 65 cents a piece. Coopering is quite a business down here. The berries are generally marketed as soon as they are picked. Those which grow on land flooded until June 1st are thought to keep the best. Fruit men come around and engage the crop before the picking begins. We can generally tell by the 1st of September what the crop will be, and what it ought to bring."

"Now," says I, "I want to know it."

"Wal," said Gilbert, "you have eyes in your head, and see cranberry patches spreading every where. It must pay unless our folks down here are all fools. I have a patch of 2½ acres, not so well situated as some of my neighbors, and I have kept debt and credit account with it for the last ten years. It cost me about \$600 to get it started. It has paid me a thousand dollars a year net profit for the last ten years."

Now if you will take Gilbert's light out from under the Cape Cod bushel, and put it on your candlestick, the whole country will see just how cranberries are raised, and what is the matter with folks that fail.

Hookertown, Conn., } Yours to Command,
Oct. 15th, 1869. } TIMOTHY BUNKER, Esq.

"I Must Stop My Paper."

A canvasser for a club of subscribers at the West says he fears his list will fall off this winter, as several he has called on to renew say that, "grain is so low, I must stop my paper this year; I like it, and would be glad to continue it, but think it not expedient."—Is not this a mistaken policy? Is the paper the first thing to be dispensed with? If produce is low, and extra effort is required to keep things going, is there not the greater need of all the helps and hints we can get? This paper, for example, is edited by a goodly number of practical men, cultivators of farms, who themselves feel and appreciate the present circumstances, and they are all the while on the look out for any item and any hint or suggestion that will help themselves and help others. It is impossible that they should not gather and give to their readers information that will help them far more than the cost of subscription for the paper, which, by the way, is little above the cost of the white paper it is printed upon. (Advertisers pay all the expenses of printing, office work, engravings, etc.) The running expenses of even a very small farm are seldom less than \$300 a year. One cent, or less, on each two dollars will not be a great tax, and it is next to impossible that the hints received through such a paper during a whole year, and the thoughts awakened, should fail to increase the product, or aid in economizing, far more than the paper costs. Ninety-nine men in every hundred, will be saved many times the cost of the paper in what it will guard them from expending in foolish or injudicious investments. Aside from information he may gather for his own work, the interest afforded to his family by the Engravings, and by the Household and Children's Departments, ought not to be entirely neglected. The hints about crops, markets, modes of culture, etc., afforded by the "Walks and Talks Upon the Farm," such as will be found in this number for example, will alone pay every cultivator. These Walks and Talks are written from actual experience, by a practical cultivator of a large farm, who is constantly studying how he shall make his farming pay. They will be continued all through the next volume.

The Ice Harvest.

But few are aware of the importance of the ice harvest. It has been derisively said of Massa-

the largest of which is the Knickerbocker Ice Co., which draws its supplies from Rockland Lake. This lake is about half a mile west of the Hudson River, and a short distance above

ice-plow, which is a blade with coarse teeth, like a series of plane-irons placed one after another. This when drawn across the ice makes a deep groove or furrow. Attached to one side



Fig. 1.—CLEARING THE ICE OF SNOW.



Fig. 2.—MARKING AND CUTTING.

achusetts that her principal productions were granite and ice. The first shipments of ice to India and other tropical countries, were made from Boston, and the ice trade has had much to

the town of Nyack; its water is remarkably pure and clear, and it is so situated as to afford unusual facilities for gathering and shipping the ice. One of our artists visited this locality dur-

of the plow is a guide which runs in one groove, and serves to mark the distance of the next one. When the ice is sufficiently grooved by the plow, it may be split up by the use of an iron bar



Fig. 3.—SAWING AND BARRING OFF.



Fig. 4.—CANALING TO THE HOUSE.

do, directly and indirectly, with the prosperity of that city. The ice trade is by no means an important one to Boston only, but in New York and near every considerable town and

ing the harvest of last year, and presents a series of sketches which show the different steps in securing the crop. The ice is first cleared, if necessary, of fallen snow, as shown in figure

terminated below by a heavy chisel. A saw with coarse teeth is also used for dividing the ice; it has a cross-handle, and is worked by one man. Figure 3 shows the operations of sawing

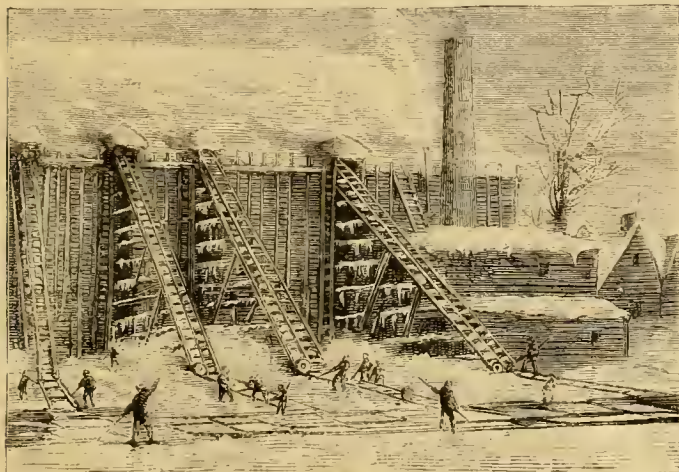


Fig. 5.—THE ELEVATORS.

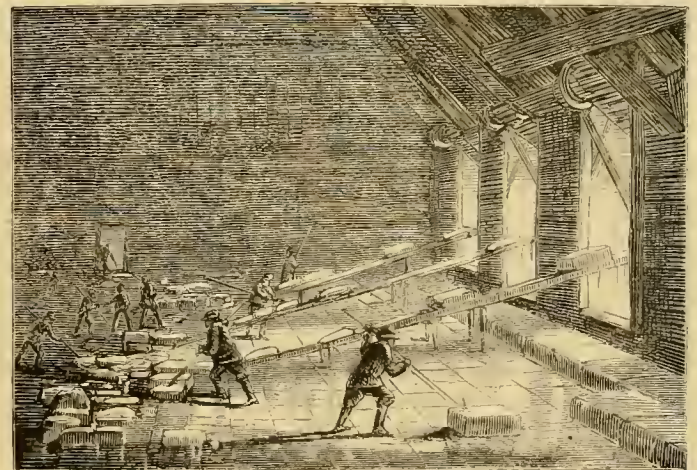


Fig. 6.—PACKING AWAY THE ICE.

city there are large amounts invested in the ice business, and employment given to thousands of laborers. The immense demand of New York City for ice, is met by several associations,

1. V-shaped snow-plows and common road-scrappers are used. Figure 2 shows the processes of marking and cutting. The cleared surface is marked by an iron point, as a guide for the

and "barring off" large masses, which have already been marked by the plow. These are floated towards the ice-house by the aid of horses, as represented in figure 4. The houses,

which are shown in several of the engravings, are enormous structures, but quite destitute of any attractiveness architecturally, windows and doors being for the most part dispensed with. Of late years the ice is hoisted into the houses by means of elevators moved by steam power. The elevators (figure 5) consists of an endless chain carrying shelves or ledges upon which the cakes of ice are placed and conveyed to the interior of the building. When the cakes arrive within the ice-house, they are stowed away. It is necessary to have the mass as compact as possible, and care is taken to secure square edges to the cakes in order that they may stow closely together without any air spaces between them. The interior is lighted only by the openings through which the ice enters, and the strong light striking upon the translucent masses, among which the workmen are actively moving, produces a picturesque and novel effect. In January, 1867, we gave an article upon gathering ice upon a small scale, with illustrations of the various implements that are in use; the same are most of them employed in large operations. The gathering of ice at Rockland Lake commenced in 1838, and for some years about 600 tons were stored. Now the Company house at that point, 80,000 tons annually. The ice is taken from the houses at the lake by a railroad, the cars of which are moved by a stationary power, to the Hudson River, where it is loaded into barges to be towed to New York, and into vessels for transportation elsewhere. The Company own a tonnage in barges and of steam tugs of 20,000 tons, and have facilities at their depot upon the river for handling and storing in vessels 1,000 tons per day. Besides the houses at Rockland Lake, the same Company have other houses at various points upon the Hudson, capable of storing 300,000 tons of ice. The capital of the Company is \$2,000,000. Next in importance to the Knickerbocker is the Washington Ice Co., which has \$1,000,000 of capital, and there are several smaller companies which supply the cities and towns near New York. It is estimated that these companies together, give employment in the winter time, to between 4,000 and 6,000 men, and constant work to about half that number. Twenty-five years ago the hotels and other large consumers in New York, paid \$20 per ton for their ice. Now, owing to the introduction of machinery, through the better understanding of the business, and the competition between rival companies, the price is reduced to \$5 per ton to hotels, and others, who consume large quantities of ice. The rates to families is not considered much above this price, when the waste of cutting into small pieces and cost of carting are taken into account.

UNCONSCIOUS INFLUENCE OVER ANIMALS.—

The horse is like his driver, and the dog like his master. A nervous, timorous man is almost sure to have a skittish horse, shying at anything unsteady, and a runaway if he gets a chance. Many a cow is spoiled by lack of patience and quietness in the milker, and the amount of milk depends more upon the milker than the pasture. If a man is afraid of a horse, the animal knows it before he goes into the stable. We have seen the most inoffensive cow in the herd so wrought upon by the nervousness of a green-horn son of Erin, as to dextrously plant her foot in his breast and send him rolling heels-over-head. A noisy, boistrous fellow about fattening stables will cause a serious loss in gain of flesh to the animals. So important is quiet to them when they are digesting their food.

Walks and Talks on the Farm—No. 72.

Winter is coming on, and these long evenings we listen for the Deacon's step on the piazza. His is one of those genial faces that is always welcome. "Pretty hard times for farmers, Deacon," I said, a night or two ago. "They are so," he replied, with a smile so cheerful as at once to remind one of the fact that the Deacon had had a good crop of apples, and sold them at \$3.00 a barrel, and that he had a dozen good hogs nearly ready for the butcher. The Deacon is not what might be called a model farmer. He never feeds oilcake or uses guano. But he always manages to have something to sell, and he never seems anxious to get exorbitant prices, and yet somehow or other he always "hits it." He is never in a hurry, but accomplishes a great deal more than some of us who are always too busy to put things in their proper place, or do work in its proper time. The Deacon has been on his farm about 40 years, and has doubtless passed through worse seasons than this. At any rate, he is disposed to take a cheerful view of affairs at present. If wheat is low, butter is high; if potatoes are affected with the rot, they can be boiled up for the pigs—and pork brings a high price; if corn is a failure on low land, he had a capital crop of peas in the orchard, and he does not care whether they are buggy or not, for he fed them all out to the pigs before the bugs could do any harm. Thus thinks the Deacon—happy Deacon, lucky Deacon.

Nevertheless, times are hard. Wheat brings a low price—a price far below the actual cost of production. And the cause is not owing to a large crop. There would be some consolation if this was the case. But the fact is that the wheat crop of the United States is not as good this year as last, and the crop in Europe is no better, while that of England is far inferior in yield and quality to the crop of 1868. A number of circumstances have conspired to bring about the present low price—principally our indisposition to sell promptly and at a fair price in the fall of 1868. Had we sold then we should have been in a condition to hold now. By holding on until the past summer and then selling at almost half what we could have got six or eight months before, we not only broke down prices, but so weakened ourselves financially, that we are now unable to hold our wheat, and are obliged to sell it at a price that will not pay the cost of raising and marketing it. The producers have had the upperhand for a few years past, now it is the consumers chance, and they will probably be as unwise as we were. They should lay in a full stock, for it is not likely that they will see prices so low again for some time. We have got accustomed to \$2.25-\$3.00 a bushel for wheat, and \$1.00-\$1.50 does not suit us at all. The wheat has cost us more to harvest and thrash than ever before. Millions of bushels have been destroyed or injured in the field or in the stack—and not a little has heated badly in the granary after it was thrashed.

It is a great mistake to force this damaged wheat on the market. Better feed it out to pigs or other stock. Boiled wheat is excellent for milch cows, and at the present price of butter it will pay well to feed the cows two or three quarts of wheat a day, either ground or cooked. I suggested it to one of my neighbors and he seemed horrified at the idea of feeding wheat to cows. And yet why not? Butter is high, good beef is scarce, at least in this section, and fat sheep cannot be found. There are plenty of

"twelve shilling" sheep, but three and four dollar sheep are wanted. In fact, good meat of all kinds is in demand at good prices. Why should we not feed out more grain? We do not need more stock in the country; all that is needed is to feed it better. Good care and good feeding would double and treble its value, and enrich our farms at the same time.

Then see how we manage the pig business. In the Chicago market report to-day, the prices of pigs are quoted, "Stockers, 74 cents per lb.; choice, fat hogs, 10 cents per lb.," live weight. I do not know what the price of wheat is where those hogs came from, but when a good deal of wheat is sold in Chicago at less than a dollar a bushel, it is easy enough to see that a farmer in the interior of the State, twenty or thirty miles from a railroad, cannot get a very high price for it at home. At Lansing, the Capital of Michigan, "choice white wheat" is quoted at 90 cents, and amber, 80 cents per bushel. Now I am not sure that I know exactly what is meant by the term "stockers" as applied to pigs, but assuming that it means pigs bought for the purpose of fattening, let us look at the figures. The farmer who sold them, we will assume sold a lot of wheat at the same time for 80 cents a bushel. He sells say:

10 hogs 200 lbs. each, @7½c.	\$155.00.
100 bushels of wheat, @80 cents.	128.00.
	\$283.00.

Now, suppose instead of selling his pigs and his wheat, the farmer had fed this 160 bushels of wheat to the pigs, and that 8 bushels gave 100 lbs. of increase; the pigs would then weigh 400 lbs. each, and would be termed "choice," and bring, or at least now bring 10 cents. The account stands thus:

10 hogs, 400 lbs. each, @10 cents.	\$400.00.
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It is said that pigs are very scarce; and I presume such is the case. Then why slaughter them when not more than half fat? The same paper that quotes amber wheat in Lansing at 80 cents per bushel, quotes lard at 19½ cents per lb. The figures stand there side by side, and are very significant.

The Western farmers say they want a "large breed" of hogs. And yet there are thousands and tens of thousands of hogs slaughtered in the great grain-growing sections of the West that do not dress 200 lbs. In fact, judging from the market reports, a hundred hogs that will average 200 lbs. is considered a good lot. From this it is very evident that it is not so much a "large breed" that is wanted as better care and more feed. I sold a couple of pigs of the "small breed" a month ago, that dressed 409 lbs. each. The butcher paid me 14½ cents a lb. for them, and my man brought me home for the two pigs, \$118.61. I have some more that are about 14 months old, that have been running in a clover pasture all summer, and until the middle of October, with a feed of corn night and morning. I think they will be better still. These pigs are of the *small* breed. And let me tell you that a big pig of the small breed is better—better for the farmer, and better for the butcher, and still better for the consumer—than a small pig of the large breed.

"What breed are your pigs?" No matter about that. I do not know any good breed that will not do just as well as these have done. Much as we need improved breeds, we need improved feeders much more. It is no use for a farmer to get a good breed of pigs and then half starve them. But the common error is to starve them half the year and surfeit them with corn the other half.

If we may place confidence in our statistics

there seems to be a scarcity of pigs, and it is probable that pork will continue to bring a good price for a year to come. And if this is the case, how exceedingly foolish it is for a farmer to sell his grain at the present low prices and at the same time keep a lot of store pigs squealing about the premises for want of food! I am inclined to think that, on a "grain and clover" farm, there is no cheaper way of making pork than to take some well-bred, well-fed September pigs, and keep them in a thrifty, almost fat condition, through the winter and early spring; and let them have the run of a good clover pasture, and plenty of fresh water during the summer, with a quart or more of corn a day. In the fall and winter they will pick up considerable food about the premises that would otherwise be wasted, and in the summer they will get three-fourths of their living in the clover field, and by the middle of October we ought to have hogs that will dress 375 or 400 pounds.

But let no one think he can obtain such results by feeding the pigs liberally one week, and neglecting or half starving them the next. They must be kept steadily gaining every day. Feed sparingly at first, and gradually increase the allowance. Do not feed lavishly for a few weeks, and then get frightened at the rapid depletion of the corn crib and cut off the supply. A farmer needs pluck. Make your calculations in advance. With what the pigs can pick up in the barn-yard during the fall and winter, and with the clover and waste from the house in summer, make calculations to give each pig 15 bushels of grain; and then if you have a good breed of pigs and keep them warm, dry, and comfortable, never scold or beat them, treat them kindly, feed regularly and with unwavering steadfastness, and then do not make the 15 bushels of grain bring in \$25 and have a nice lot of rich manure into the bargain, it will be because such liberal feeding has brought down the price of pork.

Oh, yes! I understand the difficulty quite well. You want the money for your grain now. That is one reason why I said a farmer needs pluck. Do not be discouraged. Do not fret; above all, do not "mope" over the stove with a pane broken in the window; and the sash shaking in the casement; while the dear children are suffering from colds caused by the drafts. I have been in houses where the snow actually drove in between the sash and the casement of the windows, while the man sat smoking by the stove during the long winter evening. With a few laths, a pound of putty, a dozen shingle nails, and a little ingenuity, he might have made the room as comfortable as if it was enclosed with double windows. No matter how hard the times are, there is no excuse for having a cold and cheerless home. Let every window (except such as are necessary to open for ventilation) be made air-tight. A stormy day is the best time for doing the work, as it is then easy to ascertain where the wind drives through. Fix the windows up tight against the casement on one side by driving, if need be, a piece of lath between the casement and window on the other side, and then nail on the side strips, and fill up any holes there may be with putty. You will be astonished at the effect. Be careful to serve the bed-room and pantry windows the same way.

You seem surprised that I should talk in this way. But I have great sympathy for a down-hearted man, and know that "hard times" are felt most severely in the family. I know, too,

that if he will only arouse himself and make an effort, his prospects will brighten at once. Begin at the house. It is astonishing how much a little attention to a few small matters will do to make a house comfortable, and the inmates happy. A farmer's first care is to his family; the second should be the domestic animals. "Be thou diligent to know the state of thy flocks, and look well to thy herds." It will not do to leave them to the care of hired men. Washington made it a rule to visit his stables every morning, and put his hands on every horse to see if it had been groomed properly, and otherwise well cared for. One of the largest breeders of Short-horns in the world, once told me that he made it a rule, every night in winter to take a lantern and visit his stables at nine o'clock, to see that every animal was comfortable. He has this year sold animals at \$5,000 apiece.

There are very few ordinary farm men that are fit to have anything to do with domestic animals. They never pet them, rarely speak to them except in harsh tones, and like to use a whip better than a curry-comb. If a man kicks a cow, dismiss him on the spot. Better let crops suffer than have such a brute on the premises.

I keep quite a number of thorough-bred pigs, and they are as gentle as lambs. But most men have been so long in the habit of abusing a pig, that if you ask one of them to go into a pen and drive up the pigs, he will look around for a club. And it is curious to see how unerringly the pigs know that he is not a gentleman. They will commence to bark at him, and manifest other symptoms of uneasiness. Beware of the man that a pig, a dog, or a child is afraid of. There is something wrong about him.

A farmer, I say, needs pluck. Capital is very desirable, but pluck is worth more to a farmer than capital. A little capital and a good deal of pluck is what is wanted. "Times are hard," but what of that? People must eat and it is our business to raise the food. We do not raise any too much. It is not pleasant to find that wheat we expected to get \$2.00 for, will bring only \$1.00. But all business is subject to such fluctuations, and we are on the whole, no worse off than other people. I was at the West once when corn was worth only 10 cents a bushel; and many of the wild-cat bank-bills in circulation were not worth over 50 cents on the dollar. The bottom seemed to have dropped out of everything. I expected to see the farmers thoroughly disheartened. Not a bit of it. They "kept right on," working harder and faster, if possible, than before. In less than two years from that time, corn in the same place was worth \$1.10 per bushel, and the farmers who went ahead got their reward. It will be the same again. There will be a sharp reaction in prices, and I should not be surprised if it comes before another harvest. But at any rate all the food we can raise will be wanted. Most of us will lose money this year. We have paid too high wages, but if wise, we can correct this mistake next year. For my part I have made up my mind not to have a single extra day's work done before next May, unless I can get it done for a dollar. At that price I would do anything that needs to be done in the way of permanent improvement, and give any man who is willing to work an opportunity to do so. The country cannot afford to have me lie idle. But if they demand exorbitant wages we have no alternative but to stop every kind of work that is not absolutely necessary to be done.

In the meantime let us take good care of our stock. Instead of forcing our grain upon an

over-supplied market, let us feed it out. We shall get our money back with interest. Hay is selling in Rochester at \$8 to \$10 per ton. Clover hay is worth that for manure. Do not sell a pound. Feed it out and let our fields have a dressing of good manure next spring. "It is all very well to talk in this way," you say, "but what are we to do for money?" That is a very ugly question. It is what I have asked myself many times during the last month, and the only answer I can get or give is "pluck." There is light ahead. Good farming will pay as well in this country as in any other—and I think better. Let us have faith and keep working.

We have had a "cow disease" in this neighborhood. The legs and teats were all covered with sores and blotches. As soon as we discovered it, I got up the cows, started a fire in the steamer to give us plenty of hot water, and four of us went to work washing and *fomenting* the affected parts with as warm water as the cows would bear. We also used some Castile soap and a little borax. The latter is a capital thing for cleaning and softening the skin, but I do not know that I should have used it only that I knew the men would doubt the efficacy of such a simple remedy as warm soft water and soap. I extolled the virtues of this white powder, gave strict injunctions to be careful of it and not waste it, and especially not to put any on the sores until they had been softened by the hot water. Then apply a little of the borax and rub it in gently with warm water and soap to form a lather. Then wash again with warm water and soap, and finally give another thorough washing with warm water alone. In this way I succeeded in getting the legs and teats washed thoroughly clean. This was the real point. We then rubbed the legs, bag, and teats, with crude petroleum, and repeated it two or three times, and the cows got well. The disease has been very general and in some cases quite serious. We do not know what it is. Some thought it was the cow pox, but that I suppose is usually confined to the teats and udder, while on my cows the inside of the forelegs were worse affected than any other parts. I attributed it to mosquitos or some other insect.

Thanks, principally to a gentleman in this County, we have a good drainage law in this State, passed at the last session of the Legislature. We can get creeks cleaned out, swamps drained, and ditches dug where it is necessary for the public health, or for the benefit of agriculture, with or without the consent of the owners of the land—and the cost of the work is to be borne by the parties benefited. A stupid neighbor can now no longer prevent you from draining your farm because his land happens to lie between you and the creek. If he is to be benefited as much as you he must bear half the expense. If the ditch will be of no use to him, you must be at the whole expense of cutting it, and if it does him any damage, you must pay for it. If farmers avail themselves of this law, it will add millions of dollars to the value of farm property of the State.

The Deacon remarked incidentally the other day: "You owe your success to underdraining and fall-fallowing."—A double compliment which pleased me mightily. No one, not even the Deacon, thought I should succeed in renovating the farm. And now to be told in one sentence that I *had* succeeded, and that the Deacon, who had witnessed the effects of my

plan of fall-fallowing, approved of the system, is as unexpected as it is gratifying.

The Deacon strongly disapproves of "sun-burning" land, and he thinks the reason fall-fallowing has had such a good effect is due to the fact that in the autumn the soil is moist, and the sun does not dissipate its virtues. There may be, and probably is, some truth in the Deacon's idea. We know that moisture is essential to fermentation. But a properly worked summer-fallow will always be moist. You cannot "sun-burn" land that is constantly stirred. The hotter the sun the more rapidly will the organic matter of the soil decompose. Take a field of strong land that needs draining. Under-drain half of it. Plow it in the fall, and again two or three times the next summer; let the other half of the field that is not drained be "broken up," as the phrase goes, for a common summer-fallow in June. Then let the sun shine on that field with all its power. It will benefit the drained and well-worked half, and bake the other half into bricks—and that is all there is to "sun-burning" land. It is not the fault of the sun, but the negligence of the farmer.

In fact, the more I see of this climate the better I like it. If you drain and work your land properly, the frosts of winter pulverize and disintegrate it, the rains of spring settle and mellow it, our glorious summers' sun decomposes it and matures the growing crops, while the long, magnificent autumn gives us a good opportunity for getting the land ready for the next year's crop. But woe be to the farmer who gets behind with his work. This continent was made for "go-ahead" people and the "nineteenth century."

The greatest trouble I have on the farm is in keeping things in their proper places. I am not naturally systematic and orderly. And "like master like men." I am sure we waste a large share of our time, and leave many little things undone, simply because we cannot lay our hands on the tools necessary for the work. It is a great evil under the sun. One of my neighbors, a good Methodist brother, and a successful farmer, has a very sensible and energetic wife. They are the model couple of the neighborhood. And I always congratulate myself when I can get my crops in and my work done as early as Mr. A. I told Mrs. A. so the other night, and she was evidently afraid that such commendation was not good from other husbands. "Why," said she, "I have just been telling him that I was ashamed at the way he leaves things around. It was bad enough for a farmer to have old barrels, old tools, a rusty ax, a crowbar, and heaps of old mortar and other rubbish scattered about the back-yard, but in a professor of religion it was more than she could stand."—This accomplished the object. He set to work and she went out and helped him. "The fact is," said she, "a man does not know how to straighten up things. He does not know where to commence!" "I don't wonder," she remarked in conclusion, "that when God made Adam he went right to work and made a woman to tell him what to do!"

Hog Troughs and Pig Feeding.

We may oftener regard the profits of farming as the savings from little economical expedients and practices, than from the great sales of crops or stocks. We feed sheep at a loss if we do not reckon the value of the manure, and if this be true of sheep, it is ten times truer of swine. At

the East, we may make pork, but seldom money, in fattening swine. They may generally be

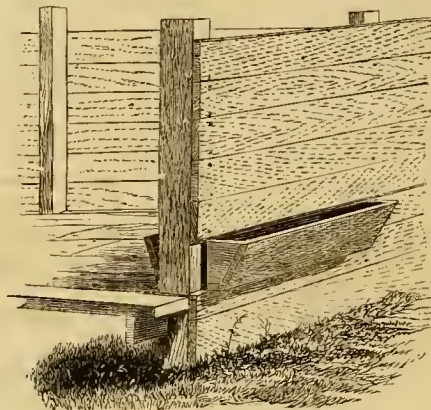


Fig. 1.—HOG TROUGH.

sold as young thin shoats for as much per pound as they will bring after two months feeding. When calculations of profits and losses are narrowed down to this, it is easy to see that with a little care and knowledge of the principles involved in the fattening of animals, we may double our profits, or the contrary, reduce them to nothing, or show a loss. Hogs to which whole corn is fed or corn on the ear, will do very well and fatten rapidly; ground corn will go a great deal farther, and when cooked still farther. One nervous or fighting hog, in a pen of ten, will be an essential damage to the rest, since each meal time brings a battle. The spilling of half a pail full of feed a day, by being obliged to pour it into feeding-troughs accessible to the swine, will count up in a few months, and necessitate serious deductions on what might be the profits. When swill is being poured into the trough, one hog will usually stand with his head at the spout, and will take it all on his head, carry off a good portion, besides what he causes to be spilt. All the thickest part is left in one spot, and must be distributed through the trough or each pig will not get his share—a serious difficulty.

We show in figure 1 how a trough may be set so as to enable the food to be evenly distributed throughout, even though the hogs have

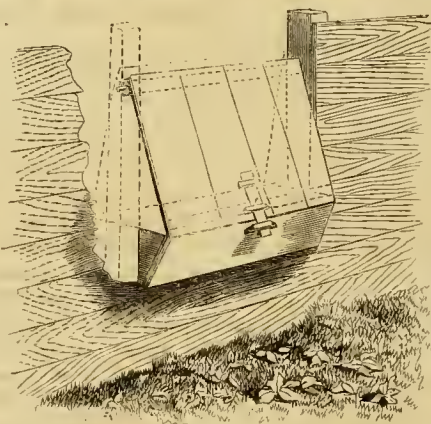


Fig. 2.—SWINGING-DOOR HOG TROUGH.

free access to the trough. The pens, being made of horizontal boards, nailed to posts about 6 feet apart, the troughs are accurately fitted between two posts, so as to project a little outside the boarding, and the board above the trough is nailed on a little above it; so that, when the edge is chamfered off a little, any thing may be easily poured into it throughout its whole length. This arrangement admits of putting partitions, nailed to the pen above the trough and to the floor, dividing the trough into narrow sections, so that each pig shall get only his share. The

only objection to this form of trough is, that it must be cleaned out from inside the pen.

A modification of this arrangement may be made, the trough coming flush with the outside boarding, and the board above it being simply taken off and nailed on the inside of the posts, and stayed by a piece nailed perpendicularly, so as to stiffen and prevent its springing.

In figure 2 we show an old plan which after all is one of the very best contrivances for hog troughs. The trough is set projecting somewhat outside the pen, and placed as in the other pen, filling all the space between two posts. Over the trough is hung a swinging door or lid, some 3 feet wide, and as long as the trough. A wooden bolt is placed upon this lid so that when it is swung back and bolted, the hogs are shut out completely from the trough; and when it is swung out or forward and bolted, they have access to it again. This style of trough is very easily cleaned out. The lid may have iron rods beat into a V-shape, and having flattened ends turned in opposite directions screwed upon it, and so placed that they will entirely separate the hogs—when feeding. This contrivance is shown in figure 3. Some ar-

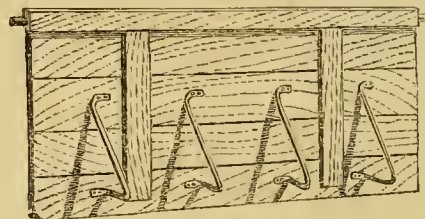


Fig. 3.—SWING DOOR WITH FENDERS.

range of this kind will be found as great a convenience, as it is an economy. The patented hog troughs are usually expensive and no better, if so good. For our own use we greatly prefer these simple fixtures, which may be easily made, renewed or repaired, as occasion may require, with the common tools which every farmer should have and know how to use.

The Cask Horse-Barrow.

It is not an uncommon thing to see casks for water, swill, or similar uses, set upon sleds, and hauled about summer or winter wherever it is needed. During the recent drouth, they were used to draw water for stock and family use, and though answering a very good purpose as an unusual expedient, yet it must be confessed, they are awkward things for steady use. We have employment enough for horse-barrows in moving casks of water, etc., upon many farms or market gardens, to make it worth while to have a good one. We represent one, the idea of which is taken from an English iron one. It is of very simple construction, as seen from the engraving. The axles may be such as will fit a pair of forewheels of a common wagon; they are attached to the ends of an iron axle-tree bent in semicircular form and somewhat flattened. The size of this piece depends upon the weight the barrow is liable to bear. If the cask should ever be filled with moist earth for instance, an iron bar, 1 1/2 inches wide and 3/4 inch thick would be none too heavy. Light wheels would of course be preferable, unless an old pair being on hand, make such desirable from motives of economy. A pair of shafts having an upward curve in them so as to keep the barrow frame horizontal, are bolted to the semicircular axle-tree, close to the axles, and a cross-piece is morticed into them, and also bolted to the axle-tree, as shown in both of the accompanying figures.

Just in front of the axles on each shaft, an

upright post of hard-wood is morticed and braced forward. This should be short, and have a notch in the front side at the top of such a form, that when the shafts are lifted up, the cask having proper trunions may be set down,

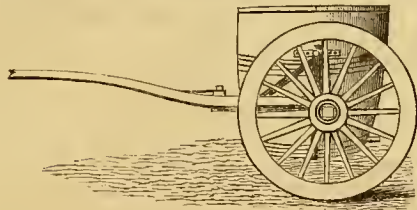


Fig. 1.—HORSE WATER-BARROW.

and when the shafts are brought down the cask may be lifted and suspended upon the barrow.

The cask must be a strong one; well hooped, and provided with trunions or ears, such as a church bell or a cannon has, attached by means of an iron band going from one to the other under the cask, and a cross-piece besides, screwed or bolted to the staves. It would be well to have several casks, for different purposes, in case they could be used; and each should have a tight fitting cover with a lid of some sort.

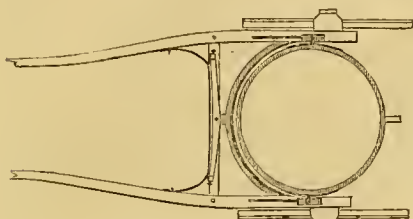


Fig. 2.—SECTION OF WATER-BARROW.

They must be hung above the middle, and it would be well to bear in mind that the shorter the upright posts are on which they swing, the less liable will the barrow be to injury from rocking sideways in going over uneven ground.

A Comfortable Farm-House.

The ideas of different people in regard to comfort vary greatly. One class which builds country houses demands a hot-air or hot-water furnace for warming the house, hot and cold water in every room, dressing-rooms attached to all the principal bedrooms; gas, inside shutters as well as outside blinds, very high ceilings, and broad piazzas running all around the house. Others are content and very comfortable in houses not only lacking all "modern conveniences," but positively inconvenient for any housewife who, from sickness or other cause, is obliged to be careful about taking many steps, or making extra work in any way. The fact



Fig. 1.—ELEVATION.

Height of cellar throughout 8 feet, the house being set higher or lower, according to the site and nature of the ground.

is, we are comfortable if we have contented minds and good health, under almost any circumstances. Nevertheless, while we cannot subscribe to the sentiment "where ignorance

is bliss 'tis folly to be wise," we believe fully in introducing all the comforts and conveniences possible into our dwellings, particularly such as will save steps and labor.

The kitchen and sleeping-rooms are prime necessities in the rudest dwelling. The roughest log-cabin has these, and nothing else, and upon every farm the kitchen is the most important room of the house. It must not be put underground, nor cheated of light; it must be accessible, have plenty of store and closet room, a good flue for stove or range; water must be near, and fuel close by. The rest of the house may be elegant or common—rooms may be numerous or few—in proportion as it is useful the kitchen must be convenient. We think architects are prone not to give weight enough to this idea, and many a farmer's wife knowing what she wants will draw a plan, using the kitchen as the nucleus or starting point, which for convenience will beat that of the city architect out and out. The architect who studies these little conveniences and comforts from the farmer's wife's stand point will furnish house plans, combining elegance and true economy.

The accompanying plans and elevation are furnished by Mr. C. Arthur Totten of New York. At our request he has drawn them altogether without what are called the "modern conveniences" of city houses, and so constructed the building that a part of it may be built at first and the house completed subsequently. In fact, with the insertion of a door or two, the ell, alone, would afford quite comfortable accommodations for a year or two on many a new farm. The house fronts the east. It has a stone foundation, with a cellar under the whole. Entering at the front door, on each side of which is a narrow window, we come into the wide hall, (H), running through the house with a west door. The staircase is open to the hall, as drawn, but at the point indicated, by projections from the sides, as the bases of an arch, a partition might be made to shut off the stairs, which is often a great convenience, and economises heat. The front rooms on each side open into the hall by double doors. The kitchen, (K), is on the northwest corner, opening into the hall by a door under the stairs. This room is always warm, in summer often too warm; hence it is placed on the cool corner, yet it is sheltered by the ell. It is lighted by one large double window and provided with a cooking range, which should have a waterback and a reservoir for hot water, holding at least half a barrel. The inside cellar stairs are entered from the kitchen under the main stairway. There is a store-room or large pantry, (P), in the ell opening close to the kitchen door; and besides the kitchen is well provided with closet room in the dresser, and in the glass-doored closet

on the left of the chimney. From the kitchen it is but a step to the Wash-room (W), or Laundry, and but a step further to the Dairy-room, (D). This has windows on three sides, and a chimney affords opportunity to make a fire either in the dairy or wash-room. In fact the latter might be conveniently used as a summer

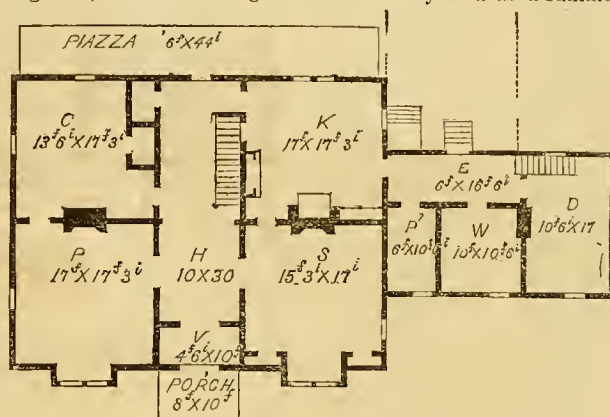


Fig. 2.—PLAN OF FIRST STORY.

Main house, 26x46 feet; ceiling, 10 feet high. Wing, 13x28 feet; ceiling, 8 feet high.—REFERENCES: V, Vestibule; H, Hall; P, Parlor; S, Sitting-room; C, Bedroom; K, Kitchen; E, Entry; W, Wash-room; D, Dairy.

kitchen under some circumstances. Over the dairy is the men's room, shut off from the rest of the second story—and over the wash-room is the girls' room accessible only through the main house; an arrangement which, for many reasons, will commend itself to good housekeepers. The place for a cistern is in the cellar under the wash-room, or in the ground just outside. The piazza on the west affords a tolerable place for the housewife to sun her fins,

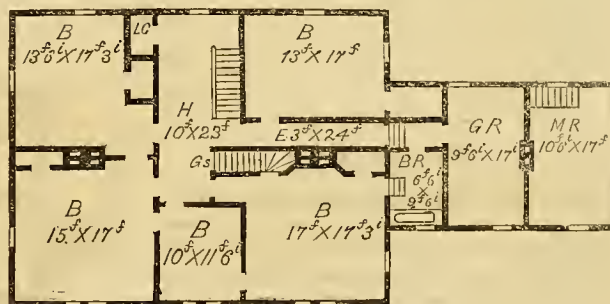


Fig. 3.—PLAN OF SECOND STORY.

Main house ceilings, 9 feet high. Wing ceilings, 8 feet high.—H, Hall; L.C., Linen Closet; G.S., Garret Stairs; E, Entry; B, Bedrooms; B R., Bath-room; G.R., Girls' Room; M.R., Men's Room.

but not equal to a southern exposure. This would be gained by what would doubtless be considered an essential addition to the house, namely, a wood-shed, enclosing the outside kitchen door and extending westward as indicated by dotted lines on fig. 2. This explanation concludes all that pertains to the kitchen and its appendages. The engravings need little explanation as regards the rest of the house, except the mere naming of rooms, etc., which is done in the references. The sitting-room or dining-room is on the north-east. It has good closets, a fire-place, and abundant light. The parlor and parlor-bedroom which would probably be used as a guest-chamber, or for grandpa and grandma, are in that portion of the house which might be omitted, and built when times are easy. The architect has provided a good-sized hall-closet. A stove in the hall would keep the whole house warm except in severe winter weather, and a pipe might be carried either to the kitchen chimney or to the parlor chimney, an earthen-pipe flue being laid in when the house is built, to avoid cutting partitions.

Up stairs, we have the principal bedrooms connected; each furnished with a flue for a

stove, or if preferred with a grate or open fire-place, and each with fine closets. The hall bedroom or Prophet's chamber, as sometimes called, is a good-sized room, and being connected with the rooms on either side is convenient for a child's sleeping-room. The bath-room is accessible from the principal bedroom and from the rear. To warm it, it would be necessary to

carry a pipe through the maid's room to the chimney, or to make in the attic a horizontal flue of earthen pipe, laid in mortar upon brick, connecting with the same chimney. The servants' rooms may be warmed in case of sickness, and ventilated by the chimney at night, the ventilators being closed by day, in case fires are needed in the rooms below. There is a large linen closet near the head of the stairs, and a roomy garret over the main house. The house is to be well built in every respect, and plainly finished throughout. It is to be double boarded; first diagonally boarded with hemlock, this

first covering of boards is to be sheathed with roofing felt; then the weather boarding put on.

General specifications of materials and cost in the vicinity of New York are as follows:

Blinds and Shutters.....	\$ 150.
Carpenter Work.....	1,600.
Doors.....	140.
Grates.....	50.
Hardware, Nails, etc.....	225.
Lumber.....	1,600.
Labor, Draining and Digging.....	125.
Mason Work and Materials.....	1,700.
Mouldings, etc.....	300.
Paints and Painting.....	600.
Tinning, (Gutters, Leaders, etc.).....	90.
Sashes.....	175.
Sundries.....	500.

Total cost.....\$7,255.

Farm Hay Scales.

Very few farmers in America are provided with the means for weighing hay, live-stock, grain, coal, etc. Yet no one can question that the ability to substitute accurate weighing from rule-of-thumb guessing, would be a great advantage, and we are convinced that no farmer who had once realized this advantage would willingly do without it. Grain and roots, as well as hay and straw, are now, in many localities, sold entirely by weight; while the ability to know, accurately, the weight of every animal bought and sold would be a great safeguard, especially to the inexperienced; and it is of no small benefit to the stock grower to be able to know the rate at which his fattening animals are converting a given weight of food into flesh. We are led to make these remarks by the fact that we have just had a Fairbank's scale put into our own barn. The platform of the scale is a part of the barn floor, cut out and supported on the levers, which are immediately below the timbers. The weigh-box is in the wall, at the side of the gangway, out of the way, and out of danger. The interest on the cost of the scale, including setting, is a tax on the farm of about \$10 a year, and it will last as long as the barn will, and longer. It is sensitive to a half-pound weight, and it will weigh up to the amount of three tons, so that everything produced upon the farm, from a pair of fowls for market to a load of hay can be accurately weighed in a moment. The platform is so secure, that the ordinary use of a barn floor, including heavy teaming, can have no effect upon it.

The Pig-House at Ogden Farm.

The accompanying illustrations are taken from the working drawings of a pig-house which has just been built at Ogden Farm, (Newport, R. I.). It is submitted to those of our readers who may contemplate improvements of this sort. The building is 24 x 32 feet, and cost (built of rough

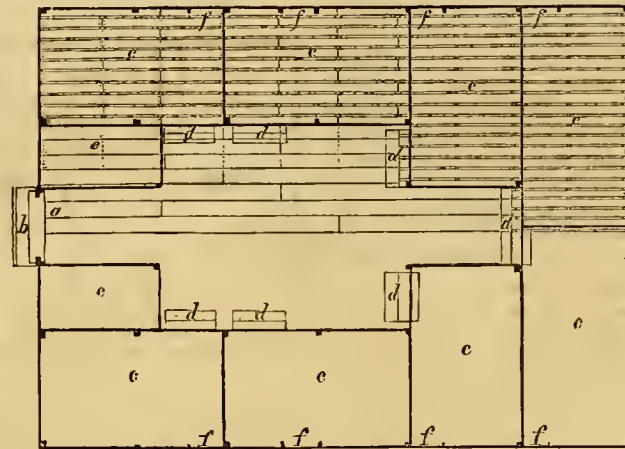


Fig. 1.—GRAND PLAN OF PIGGERY.

A, entrance; b, steps; c,c, pens; d,d, troughs; e,e, bins of dry earth; f,f, flap doors.

pine battened, with cedar shingles on the roof) only \$425, including the excavation of the manure pits and the boarding up of their sides.

Fig. 1, is the ground plan. There are four pens 8 x 10, two 6 x 10, and two 6 x 12. The troughs all open into the center area, and are opened by swing posts which expose them to

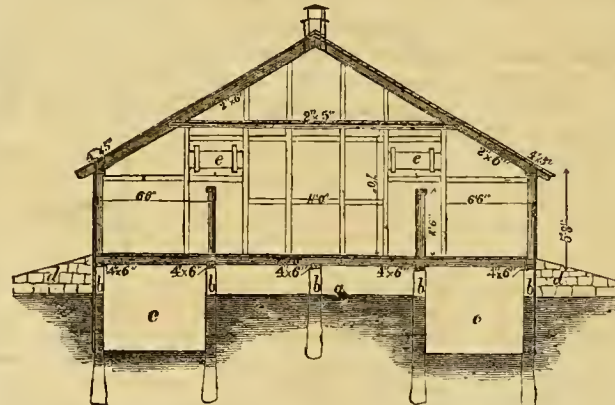


Fig. 2.—CROSS SECTION OF PIGGERY.

a, a, ground line; b,b, posts; c,c, manure pits; d,d, stone slopes to yards; e,e, flap doors; f, ventilator.

the attendant for cleansing or filling, or to the swine for feeding, as may be desired. The two large bins at the sides of the entrance door are filled with dry earth, with which the pigs are treated to the luxury of the earth closet—to the

dry manure mixed with earth. In the centre of the open floor, stands a Prindle steamer, whose 7-inch smoke-pipe discharges into the middle of a 12-inch galvanized iron ventilator, whereby efficient ventilation is secured. The food is cooked in pork-barrels, which may be moved about at pleasure; the flexible steam hose with an iron nozzle conveying the steam to the bottom of the barrel. Fig. 2 is a cross section, showing the manure pits, pens, etc. More than 15 cords of manure can be stored in the pits, which are to be emptied through shuttered windows. Fig. 3 is the front elevation of the building, which is to have small yards at the sides, communicating with the pens by slopes from the outer doors. This house will accommodate from thirty to forty shoats, or a corresponding number of breeding animals.

Coloring Butter in Winter.

After severe frosts, when cattle have to be fed on cured fodder, even though roots form a large part of their food, the butter loses the rich color the grass has given it, and is but little more attractive in appearance than so much tallow. There are various artificial means for coloring it. A carrot, grated into the churn, will communicate a light golden hue, and extract of annatto, mixed with hot water, and left twelve hours to steep, will make a still richer tint. Annatto applied directly to the butter itself, is much more effective, and is chiefly used as a coloring agent of both butter and cheese. A slight admixture of Turmeric, however, heightens the color very much, but it must be used most sparingly, as too much of it produces a brimstone color that is anything but attractive. We have found the following plan very satisfactory: Take a quarter of a pound of annatto, and a half-ounce of turmeric, and steep them together in a pound of melted butter, keeping them over a slow fire for some hours. Then strain through a fine cloth into a jar, add a little salt, and keep in a cool place. When the butter is half worked, take a small quantity of this mixture (experience

will teach the proportion), melt it, and pour it in a depression in the lump of butter, working it in as it cools with the butter that surrounds it. This will assume a deep reddish color as the added matter combines with it. Then work this thoroughly through the mass until it is all of the same shade. The color, after a little practice, may be made equal to the richest gold of the June dairy, and the flavor will be slightly heightened. The butter will, in fact, be much more saleable, and really somewhat better. The most celebrated butter makers about Philadelphia, except those who have Jersey cows, color their butter with pure annatto, which gives it a deep orange color. In order that their city customers may not know any difference, they use annatto in summer as well as in winter, and the rich color of the crack Philadelphia butter, which is fondly ascribed to some peculiar quality of Brandywine grass, is really the effect of

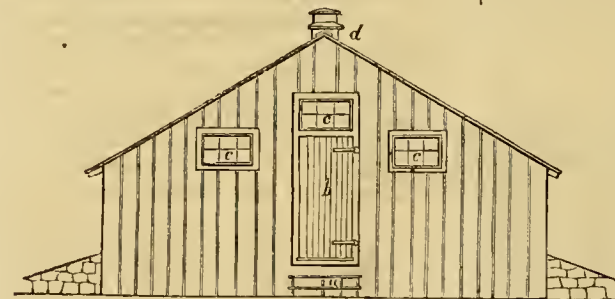


Fig. 3.—FRONT ELEVATION OF PIGGERY.

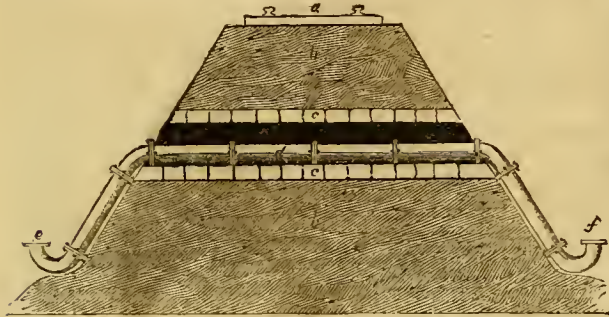
a, wooden steps; b, battened door; c,c, windows of 8x10 glass; d, ventilator.

great improvement of the air of the building, and of the manure. The floors of the pens are made of 2-inch planks, 6 inches wide, laid with 1-inch openings between them, which secures the immediate passage of the urine to the pits below, and the gradual working through of the

the use of foreign matter. Nothing can exceed the color of the June make, and by the careful use of turmeric as an addition to the annatto, this color may be kept up the year round.

Syphons for Farm Use.

Mr. George H. Wilson, the superphosphate manufacturer, has hit upon a device at his farm on Seekonk River, R. I., which solves a very difficult problem in drainage and water supply, and enables us to answer a number of inquiries from subscribers more satisfactorily than has heretofore been possible. Mr. Wilson wished to drain a large and valuable peat swamp. The outlet was through a culvert under a railroad embankment, which was four feet too high. Immediately on the other side of the railroad there was fall enough. To avoid the expense and danger of tunneling under a railroad in constant use, it was desirable to lift the water over the four-foot obstruction. The serious objection



SYPHON AND OUTLET TO A DRAIN.

to a syphon, under such circumstances, is that as soon as the water ceases to flow a full stream, air enters the pipe, and the working is stopped. Mr. Wilson obviated the difficulty by adding a reverse curve to each end of the syphon, which was laid through the culvert. The mouths of the two curves (the inlet and outlet of the syphon) are on the same level. This very simple arrangement prevents the air from ever gaining the least entrance, and the syphon is always ready to work. The stream above may become entirely dry, and remain so for weeks, yet the moment the water rises a single inch above the inlet, it will commence to flow again. The arrangement of this syphon is shown in the accompanying engraving. It consists, in this instance, of ten-inch iron pipe.

Of course the same arrangement is practicable for use under all circumstances where water is carried over hills or other obstructions, whether for drainage-outlets or for water supply.

Each end of the pipe should be turned up to the same level, or, which would be quite as well with small pipes, each end may be sunk to the bottom of a barrel, the barrels standing on the same level. For pipes of small calibre, where the air contained in the water might do harm by collecting at the top, it would be well to have a small suction pump at that point, by which it may be from time to time withdrawn.

Don't Sell Your Farm by the Bushel.

Many a farmer who works steadily and zealously to keep every acre of his farm as an inheritance for his children, is unwittingly selling it away by dribbles, when, by a more judicious course of management, he might make as much money and keep adding to the value of the place. Having a barrel of good wine, he draws off the contents, little by little, and keeps the barrel without the wine. The value of the

farm lies in its *fertility*, and, except in rare cases, only in its fertility. It depends on his management whether he leaves it like an emptied barrel to his children, or full of the good wine, that constitutes its great value. Indeed, the example is not strong enough, for the fertility of the land is not an idle wealth, like the wine in the barrel. It may be drawn out and lived upon, and yet be kept constantly increasing. It all depends on management whether the father shall thrive, and, at the same time, increase his sons' inheritance, or the reverse.

It is not the crop which grows that exhausts the land; it is the disposition we make of it after it is grown. Every bushel of grain contains matters supplied by the soil. If it is sold, there is an end of it, so far as the farm is concerned. If it is fed out on the place, nearly the whole of the part taken from the soil goes into the dung heap, and there goes with it matter which the growing plant took directly or indirectly, from the atmosphere, and which helps to develop more of the mineral plant-food of the soil, and to make more than a bushel the next year. Therefore, look well to the crops. Sell of course, all that cannot profitably be fed out on the place, and, with a part of the price, buy manure to bring home. But, in counting the profit and loss of feeding at home, consider always, the value of the manure. It is safe to say that, one year with another, corn thoroughly soaked and cooked, (never mind the grinding

if you cook thoroughly) and fed to well-housed swine of a "growthy" breed, will bring more money than if sold in the market, to say nothing of the manure; indeed, it will more often than not, pay to buy corn to make into pork—cooking it first. Grow clover to be fed to your own stock, the sod to be plowed in in the spring of the second year; plant corn on the land; feed the corn to your own pigs, and use the manure of the sty, to top-dress in March the clover you intend to plow for corn in May. If this plan be followed, a crop of wheat or of barley, every third year, will not prevent the land from growing richer and richer; but if the farmer sells his corn and wheat, and buys no manure, the impoverishment of the farm, and to the emigration of his sons is sure.

Locating Trout Ponds.

A great interest has been awakened in the breeding of fish within a few years, and many are looking up trout brooks and preparing to put up buildings for hatching and rearing this beautiful fish. But it is not every brook in which trout breed naturally, that is adapted to their artificial propagation. Some are too much affected by drought. In the wild state the trout seek deep ponds and the springs along their native brooks, and are safe in time of drought. If they were confined by the ten thousand in an acre pond of stagnant water, the most of them would perish. A stream, then, must be permanent, and be fed by living springs, and it should not be subject to violent overflow in freshets. If the stream is very much affected by heavy rains, there is constant danger that the screens in the flumes will become clogged with leaves, and be swept away and the fish be lost, even if the dams should withstand the flood. Floods are one of the greatest perils of the fish breeder. It is very easy to lose twenty

thousand dollars and the labor of years in a single night, if suitable precautions have not been taken. A stream whose medium flow is a thousand gallons a minute, and never above two thousand, is of the most desirable capacity. If the flow should fall to three hundred gallons a minute in extreme drought it would not probably endanger the lives of the fish. Then it is a matter of importance that the brook should run clear even when it is raised by rains. Clear water is not only desirable in the hatching-boxes, but in the feeding-ponds, especially in the pond where the young fish are confined. A trout will live for some time in a muddy brook if the water is cold enough, but it is not a congenial home. For this reason a stream selected for breeding should not run near cultivated fields or cross-roads where large quantities of muddy water are discharged. The clearer the stream, the better. Then the temperature of the water is to be considered. The nearer it can be kept to fifty degrees, which is about the temperature of our living springs, the better. But there are many brooks that in summer rise as high as 70°, and in winter sink as low as 38°, that are famous trout streams, and furnish good facilities for breeding-ponds. If living springs can be brought into the hatching-house, and into the ponds, it is exceedingly desirable, but by no means essential. The eggs hatch in forty days in water at fifty degrees, and six days are added for every degree of increased cold. In water at 40° it would take a hundred days to hatch the eggs. But where a man has two or three hundred thousand eggs in the boxes, and gives all his time to the business, it makes but little difference whether the hatching takes forty or a hundred days. The health of the young fish is not affected by the length of the incubation. It will generally be found that the location must be made at the fountain head of the stream, or within two or three miles of it. If the stream runs through a swamp that absorbs a good deal of the rainfall, and parts with it slowly, it is all the better. It is also desirable that the region from which the springs flow should be covered with trees and brush. This keeps the water cooler, and makes the flow more uniform. There will indeed be more trouble from the leaves, but a well-appointed fish-hatching establishment supposes a man always in his place to attend to the screens. The starting of a trout-hatching enterprise will involve the outlay of from one to three thousand dollars. Before making the investment it will pay to secure the services of some one skilled in the business to examine your waters, and determine the best location for the ponds and the buildings.

Saving Manure.

The quantity of manure that may be saved and manufactured from twenty head of cattle in a year is astonishing to an old-style farmer, who believes in the good old stuff, but is too close-fisted to hire labor. The writer came into possession of a run-down farm last spring, with about forty loads of manure in the two barn-yards, as the result of last year's operations. The practice in the neighborhood is to clean the yards in the spring, and let them lie bare until after haying, when a few loads of dirt and seaweed are carted in, which suffices for the year. As soon as the yards were cleared, we began to cart in old butts, stack bottoms, swamp mud, decayed leaves, head lands, and sea-weed, adding every week a few loads, and plowing occa-



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THE BUFFALOES.—ORIGINAL DRAWING FROM LIFE STUDIES, BY W. M. CARY.—Engraved for the American Agriculturist.

sionally to mix the droppings of the cattle with the contents of the yard. All the manure from the horses, oxen, cows, and pigs, was thrown into the yards and mixed with the accumulating mass. By September we had at least two hundred and fifty loads of compost of much better quality than was carted out in the spring, ready to be spread upon the meadows or to be plowed under for grain, and the best part of the year for making manure is still ahead. In the common practice of leaving the yards bare during the summer, the most valuable part of the manure is lost for want of absorbents, even if the cattle are yarded at night. There is nothing to save the liquid manure, which is worth quite as much as the solid. Most of the ammonia escapes into the atmosphere. But with plenty of good absorbents and the frequent plowing and harrowing of the yard, nothing is lost. All the refuse material dropped in the yard becomes charged with ammonia, and plant food is manufactured very fast. It tells upon the grass, grain, and root crops immediately, and the process of renovation begins. This, of course, costs labor and the outlay of capital, but it is a kind of expenditure that pays very soon in the increased crops. We must either

do this, or worse. It will not do to rely upon commercial fertilizers for ordinary farming. The great bulk of fertilizers must be made at home. Neither will it pay to have lean barnyards, and grow grass at the rate of three-quarters of a ton to the acre, 25 bushels of corn, 30 of oats, 10 of rye, and 50 of potatoes. The farm runs down and the farmer's purse grows lean with this kind of management. We want to double and treble these crops, and by saving manure any farmer of ordinary intelligence can do it.

The Buffaloes.

Thousands of people get glimpses of the Buffalo now-a-days in their six days rail-road ride to California, who have never before seen this the noblest of our native quadrupeds. Many travelers stop for a few days' shooting. The Buffaloes thus rendered familiar with civilization are fast decreasing in numbers; and it will require legislative action to preserve these cattle of the plains for another generation of hunters. The Buffalo cows drop their calves early in the spring, and in seclusion, from which they emerge as the warm weather comes on and before the heats of summer. At this time they receive the

attentions of their lordly mates. The courtships are often conducted in a very exemplary and quiet manner, but should two bulls take a fancy to one cow, a passage of arms is the only resource. This settles the controversy, and the preferences of the favorite at the same time. These encounters, if between strong bulls, well matched, are often really terrific. They meet running toward each other in full career, the clash of horns and thud of foreheads resound over the plain, and both recoil only to gather breath, run backward a ways and again rush to the charge. It is seldom that fatal injuries are received, and this is accounted for by the strength of the horns, (which indeed are very much battered), of the frontal bones, and by the thick pads of woolly hair which cover their foreheads. When one is worsted he retires, and disconsolate yet hopeful, follows at a respectful distance the happy pair, unless charmed away by meeting some lone cow or heifer, which will take compassion on his loneliness. These matches generally last for the whole season, and until the bulls and cows unite in those immense promiscuous herds, which blacken certain portions of the plains where food is abundant during the autumn and winter months.

A Beautiful Green-house Climber.—(*Myrsiphyllum asparagoides*.)

For some years the florists around Boston have cultivated a delicate vine which is exten-



ASPARAGUS-LIKE MYRSIPHYLLUM.

sively used in floral decorations. We first met with it a few years ago in the hands of a New York florist, who knew it only as Boston Smilax, and it is by some called Boston vine. The name *Myrsiphyllum*, means Myrtle leaf, and *asparagoides*, resembling asparagus, a likeness which, while it is apparent to the botanist, is not very manifest at first sight. The roots are fleshy; the stems, though small, are strong and elastic, and climb to the height of some twenty feet. The foliage is of a fresh, lively, shining green, if that can be called foliage which is not, properly speaking, leaves. The proper leaves are small, colorless scales upon the stem, from the axils of which spring the apparent leaves, but which, structurally considered, are modified branches, which take the place of leaves. The flowers are small and white, appearing two or three together, and are followed by a globular berry. The plant is grown in ordinary green-house culture, and is trained upon strings. It will grow well in window culture, and when trained over a support of some kind soon covers it with luxuriant green. It may be propagated by dividing the root, but our florists generally raise it from the seed, which is freely produced by old plants. This matures in July, and is sown as soon as ripe. It is a native of the Cape of Good Hope. The engraving gives some reduced branches and a portion of the plant of the natural size. The delicacy and

beauty of the *Myrsiphyllum* especially adapt it for use in floral decorations, and it has an additional good quality—it does not readily wilt. For making up floral wreaths for the hair it is superior to all other green, and large quantities

are used for this purpose alone. It is sometimes used with fine effect to trim a white dress; being obtainable in long pieces, it readily forms a graceful tracery far superior to any embroidery. We think that the cultivation of this plant for ornamental purposes must be peculiar to this country, as we do not find it in any of the European plant catalogues, or in the foreign works on floriculture. Lately the florists near New York have engaged in the culture of this plant, some of them devoting whole houses entirely to it. The *Myrsiphyllum* bears cutting well, as new shoots spring up in great abundance after each cutting back. We had a speci-

men planted out in a somewhat protected place during the summer, which flourished luxuriantly. Judging from this it will not be necessary to keep it housed all the year around.

The Prickly Fruited Gherkin.—(*Cucumis Anguria*.)

There are a number of plants which were first introduced for ornamental purposes that were afterwards found to be eatable, and have become more or less common articles of food. The tomato is a notable instance of this, and in a lesser degree the *Martynia*, *Nasturtium*, and others, have been promoted or degraded, as we choose to view it, from the flower garden to the kitchen garden. The *Cucumis Anguria* is found in the seedsmen's catalogues (sometimes under the name of *C. Arada*), among the ornamental climbing plants. It has a pleasing foliage, and the fruit attracts attention from its singular form and yellow color when ripe. The fruit is of the size of a small egg, and attached to the vine by a very long stalk; its surface is roughened with numerous spiny projections, and is yellow, or sometimes pale green. The best success is had by starting the seeds in pots, and turning the plants out when the weather is warm. As a kitchen garden product the fruit is taken before its skin becomes hard. Its smell and taste resemble the common cucumber. Its main use is in pickling. In April,

1868, we inadvertently applied the name of the present plant to the Egyptian or Hairy Cucumber, *Cucumis Chate*, which is similar in shape and uses to the present one, but has the fruit very thickly clothed with coarse hairs.



PRICKLY-FRUITED GHERKIN.—(*Cucumis Anguria*.)

The Ailanthus as a Timber Tree.

The *Agriculturist* has been one of the few friends that the Ailanthus tree has had in this country, and we were glad to see, in looking over a recent "*Journal de l'Agriculture*," that a French writer has made a strong appeal in its favor. Its rapid growth, utility of its timber, its hardiness, and the readiness with which it adapts itself to unpromising soils and localities are points which should strongly recommend it to planters. We are well aware of the objection that is, and with reason, made to it—its unpleasant odor when in flower. This disagreeable odor is given out by the staminate or the male tree only. A writer in the *Horticulturist* singularly enough considers the two trees as distinct, and says: "I cannot but believe that the common Ailanthus was introduced by mistake, and that those who brought it to this country intended to have introduced the tree which I have described"—referring to the fertile sex. If this writer should plant some of the seeds of the tree he so much praises, he would find that a large proportion of the resulting trees would be the offensive males, and that there was no "mistake" about its introduction. Where large trees are required in situations where the odor would be objectionable, they can be grown from cuttings of the roots of the pistillate or female ones. For small posts, stakes, or other uses for which trees too young to have

blossomed will answer, they may be raised from the seed. Experiments made in France show the wood of the Ailanthus to have less density than that of the oak, and greater than that of the elm, while it is superior to either of the two in elasticity and tenacity. The writer above referred to states, that he knows of Ailanthus planks which have been exposed to the weather for twenty-seven years, without shelter or paint, and that the wood is perfectly preserved. The same author quotes instances in which the wood has been used for agricultural implements, etc., and it neither warps nor cracks. The wood saws readily, and afterwards acquires great hardness under exposure to the air. In a former volume we cited instances in which it had been used for cabinet work, and gave a note from M. McCullough, who has found it one of the most available materials for vineyard stakes. A small plantation will keep up a supply of stakes, as, when cut off, a new growth springs up from the root. With all these facts in favor of the Ailanthus, and only one against it,—and that being one which, with a little care, can readily be avoided,—we suggest to those about to plant trees to give it a share of consideration.

Cordon Training of The Pear.

Our people are, as a general thing, averse to what may be called the refinements of horticulture. The training of fruit trees against walls, which is a necessity in Europe, is, fortunately useless here, unless one wishes to hide a bare space, and then we prefer to use some rapidly growing vine. Cordon training, as it is called, means training a tree to a simple stem, be it horizontal, upright, or inclined at some particular angle. While visiting the extensive grounds of Hovey & Co., at Cambridge, Mass., this autumn, we saw a successful specimen of training upon the simple oblique cordon. This method of training would be useful to those who have restricted grounds and wish to grow a number of varieties, to those who wish to have some horticultural pet with which to amuse themselves, as well as to those who have places where it is desirable to have a screen. It is not commended to persons who have an abundance of land, or to those who cannot give the proper attention in caring for the trees. The oblique cordon was proposed by

M. Du Breuil, of France, and is carried out by training the trees to a single stem, at an angle of 45 degrees, upon a trellis made of wooden slats or furnished with wires. The trellis at Messrs. Hovey's was of wood, and this, in our climate, would be more suitable and less troublesome than wire. The trellis is made about 10 feet high, with strong posts at suitable distances, a

cross-bar in the center, one near the bottom and another near the top. Slats are nailed to these pieces 18 inches apart, at an angle of 45 degrees. At each of these slats a young tree, one year old from the bud or graft, is planted, which will of course bring them 18 inches apart. The young trees are pruned by removing about one-third of their length, cutting back to a good bud to prolong the growth. The next season the growth is to be

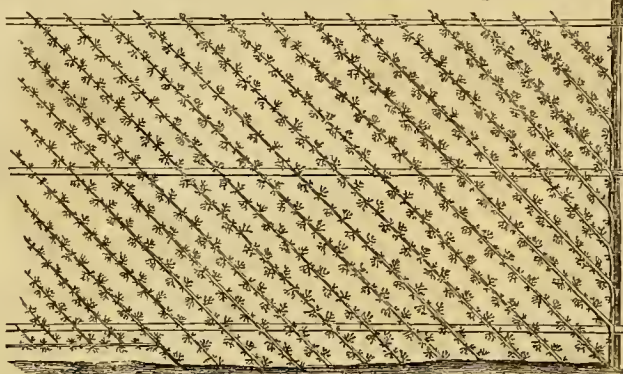


Fig. 2.—PEAR TRAINED IN SIMPLE OBLIQUE CORDON.

entirely from the uppermost bud, and all shoots which start from the other buds are pinched when they have made five or six leaves. At the close of the second year's growth the tree will appear as in fig. 1. One-third of the new growth is again cut away, as shown by the line, and the stem the next year is again prolonged by extension from the upper bud, the side shoots being kept pinched in, and this treatment is followed until the tree reaches the top of the trellis. For the first two years of its growth at the trellis the tree is kept at an angle of 60 degrees, but the third year it is inclined to 45 degrees. Of course the tree must be kept well tied up to the slats of the trellis, and the pinching must be carried on, to induce the formation of fruit-bearing spurs all along the stem. The engraving, fig. 2, shows a trellis filled with pear trees trained in oblique cordon, and indicates the manner in which the trees at each end are trained in order to properly fill the corners. We have given but a brief outline of the method, in order to bring it to the attention of those who wish to avail themselves of the advantages it offers. The details of pinching to induce fruitfulness, we defer until near the time for performing the operation.

Cutting and Preserving Cions.

It is probable that the sooner cions are cut after the leaves have fallen, the better. We know that the vitality of the peach and other somewhat tender trees is impaired by severe cold, and we may infer that cions of the trees we consider hardy are, to say the least, in no wise benefitted by this exposure to the great variations of a northern winter. Cions should be preserved at a temperature so low that the buds will not be induced to swell, and in a manner that will not deprive them of their natural moisture. At the same time they must not be surrounded by an excess of moisture, which would induce decay. These conditions are met in a rough way by burying the grafts in sand or earth which is only very slightly damp. The objection to this mode of preservation is, that the cions become covered with grit, which much annoys the person who sets them by dulling his knife. When bog-moss (Sphagnum) can be obtained, this will be found an excellent material with which to pack the cions in a box.

It should be used very slightly moist. Sawdust, which can be obtained almost everywhere, is equally good. Taken just as it comes from the mill, it is of the proper degree of dampness, and will preserve cions perfectly if used as a packing material. Where there are many cions and they will not be needed during winter for root-grafting, they may be placed in a box which is to be only half or two-thirds full; cross-pieces are fastened upon the inside in such a manner as to prevent the cions from falling out when it is inverted. The box is then buried, upside down, in a place where water will not come in contact with the cions. In putting away grafts one cannot be too careful to prevent their losing their identity. Tie securely in bundles, and with each tie up a stick marked in such a manner as not to be obliterated. Some take the precaution to cut away a portion of one or two of the larger cions, in order to obtain a flat surface on which numerals are cut with a knife, as shown in the engraving. A permanent record is of course kept of the varieties indicated by these numbers.



CION.

Have you any Grape Vines?

While enjoying an abundance of grapes this autumn, we have often wondered if any reader of the *Agriculturist* who owned or hired a piece of ground, no matter how small, was without this delicious fruit. If there are any grape-less ones among our constituents, it is not that we have not in past seasons said sufficient about grapes. We have discussed varieties, and given the plainest possible directions for the cultivation of the vine. We were accused of having the grape fever. It is a very good fever to have, and if it were contagious we should as a people be much better off. We would have every one plant a vine or vines, no matter whether they own the land on which they place them or not. An old friend of ours, who changes his residence almost every year, always plants vines in the yard of his new dwelling, and leaves them there for the benefit of those who may come after him. "The grape business has been overdone," is now a common remark. In one sense it has been overdone. Those who with no knowledge of grape-growing, calculated the number of vines to the acre, and the number of pounds of fruit to the vine, and made large profits by the easy method of simple arithmetic, overdid the business. So those propagators who grew supplies of stock far in advance of the demand complain that the business is overdone. Still the fact remains, that not one-tenth of the people have an abundance of grapes, and a still less number have them from September until January. The grape-vine is the most accommodating of plants. It can be kept down close to the ground, or it may be made to reach to the eaves of the house. There is scarcely a city or village yard which cannot support several vines without inconveniently restricting the space. As for those who live on farms and have plenty of land, they can, if they will, have all that can be eaten in the family, and some to spare. The mail gives facilities for obtaining vines from a distance, and catalogues of prices are to be had of dealers for the asking. Wherever the autumn is long, they may be planted this month, but in severe climates spring is the preferable season. As to varieties, there is considerable choice, and it is also a point upon

which tastes differ. The Concord has been called the "grape for the million," and so far as large and certain crops of a not very superior fruit go, it gives general satisfaction. The Delaware is a first-class variety, and succeeds in most localities. The Iona, not excelled in quality by any other grape, fails in some places, and is most excellent in others. Diana, Creveling, Walter, Alvey, and many others we might mention are good. The Eumelan is a comparatively new sort, now attracting attention as an early grape. We have before spoken of the vigorous and healthy growth of the young vines, and the excellent character of the fruit. In order to put this novelty among grapes within the reach of our subscribers, it has been arranged to supply it as a special premium, as will be seen by reference to another page. The vines of the Eumelan can, as there indicated, be obtained at reduced rates, or by the expenditure of a small amount of trouble in obtaining subscribers by those who do not wish to pay the money for them. That we think that this is a grape which promises to become popular is shown by our offering it as a premium. At all events, let us have more grapes grown for family use. Those who grow for profit need not be urged to plant vines, but farmers and householders generally do need to give this matter more attention. This is a branch of agriculture that is not likely to be soon "overdone."

Two Pears Little Known.

In the desire for novelties in fruits, we are apt to overlook the really good things we already have. In the long list of pears, there are many of great value that are known only to a few, for the reason that they have not been kept before the public. In looking over Messrs. Hovey & Co.'s large collection, we were struck

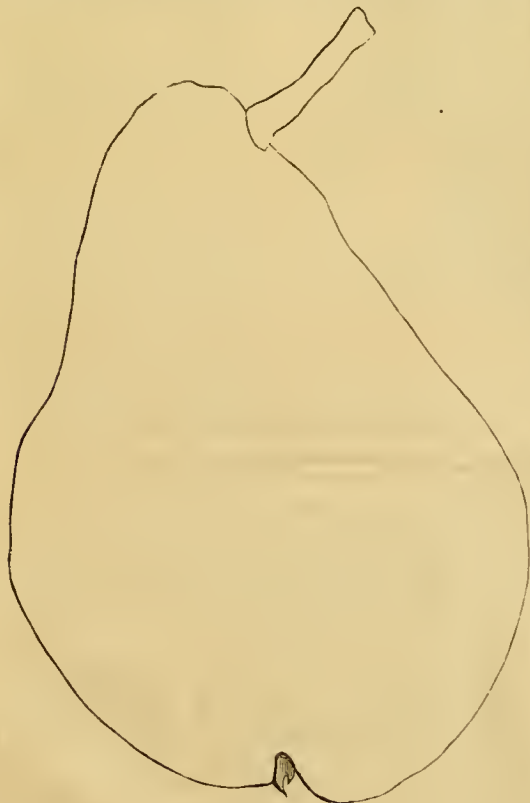


Fig. 1.—ADAMS PEAR.

with the number of excellent varieties which are now seldom heard of. We give drawings and descriptions of two of these, as we think they possess merits entitling them to be better known.

ADAMS.—Named for a clergyman in Waltham, Mass., who raised it from seed. The tree is vigorous and bears well. The fruit is large, and of the shape shown in the outline, fig. 1. The stalk is very generally set obliquely under a lip. The surface is uneven, pale yellow, often crimson on the sunny side. The flesh white, very



Fig. 2.—TEA PEAR.

juicy, vinous and melting. This pear ripens in September with the Bartlett, to which it bears some resemblance in external appearance, though it is of a much better quality. We are informed that it is sometimes sold in the Boston market as the Bartlett.

TEA.—This variety was raised in Milford, Conn., from a seed found in a parcel of tea, a circumstance which gave it its name. The tree is vigorous and productive. The shape and average size of the fruit are given in fig. 2. The skin is of a fine lemon yellow, with numerous small brown dots, the cheek is sometimes reddish, but not so in our specimens. The flesh is very fine grained and melting. Downing classes it as "good to very good"—we incline to "very good," and wonder why a fruit of such excellence should not be more frequently seen. It ripens early in September.

Notes from "The Pines."—No. 7.

In introducing ornamental plants into our grounds, we sometimes give quarters to a troublesome customer. Most who have had much to do with flowers remember the *Calystegia pubescens*, a sort of double Morning-glory. It is a beautiful vine, but woe to the garden where it once gets a root hold. Many years ago it was in the yard of a house in which I lived in the city. I managed to keep it out of the borders with some success, but it fortified itself under the brick walks, and would shoot out at me from between the bricks. For two or three years I fought that thing, and now as I go by and see the spot covered by a large marble building, I feel an inward satisfaction that the

Calystegia has got its quietus. I was reminded of this old enemy by a new one. The florists offer *Ægopodium Podagraria variegata*, and we planted a few small plants. It has very pretty variegated foliage. The plain form of it is known as Goats-beard, in England, where it is considered one of the most obstinate of weeds; but it was hoped that this, being a "foliated plant" as the florists will call variegated things, would behave itself. Hardy! of course it was, and how it did grow! This fall I was in a friend's garden in Massachusetts, who called me to see his lawn, it was actually ruined by the *Ægopodium*, and I doubt if anything short of spading up and sifting the soil would ever get it out. This morning I dug up our four specimens, and a job it was. They had made underground runners over two feet long, thickly furnished with buds, and as tender as a potato sprout. It is to be hoped that no fragments of these shoots were left in the ground, for it is a weed compared with which the Canada Thistle is respectable. N. B.—We have no *Ægopodium Podagraria variegata* for sale.

Have been selecting some Black Alders for planting in a contemplated shrubbery. There is a great difference in the fruitfulness of these, some of them being as full of berries as they can hold. We pay too little attention to the shrubs that are showy when in fruit. For a real blaze of scarlet, nothing is equal to the Black Alder. I was disposed to smile when the English papers announced the discovery that Poke-weed was hardy. There is one just over the fence in a neighbor's ground that would be a grand thing if set in a lawn. It has numerous stalks, some eight feet high, and these are of a color and bloom that would vie with the richest purple plum, while the large drooping clusters of berries shine like jet. What a pity it is so "common."

A friend writes that he wishes "The Pines would say something about taking care of roses and other tender things." Some timely notes were written last month, but were crowded out. It is now too late to say anything about most tender plants. If the Heliotropes, Lantanas, Lemon Verbenas, Scarlet Geraniums, and the like, are not in the cellar or other winter quarters, they are past remedy. But the monthly roses (China and Tea), are nearly hardy and continue to bloom for some weeks after the frosts have blackened the other things. I propose to try Mr. Henderson's plan of laying down and covering, which succeeds well in any soil not too retentive of moisture. A shallow trench is dug in which the plant is laid by bending over; it is pegged down, and covered with sods placed grassy side up. Some litter should previously be put around the bushes to keep the soil from freezing, so that the operation can be postponed until the ground freezes. Around New York the middle of December is soon enough. Covering too early will lead to decay.

Did you ever notice how the weeds get ready for winter? The perennial ones, such as Docks, Thistles, and Dandelions, etc., from this year's seeds have grown into neat little plants with a rosette of leaves which lays close to the ground. In this condition they look very innocent, but just lift one of them and see what a root it has. Without making any show about it, it has been laying in an underground store of food, and as soon as warm weather comes, it will push with astonishing vigor. It does no good to cut their heads off with a hoe at this time, for the leaves

have done their work. Nothing short of uprooting will be certain to destroy them.

The sudden and unusual cold caught me in the midst of bulb planting, and put an effectual stop to operations in that line. It is much better to have bulbs in early, but I have planted them late in December with good success. Ranunculuses and Anemones, which can hardly be considered as bulbs, should be kept out of the ground as late as practicable. If planted too early, they are very apt to start if a few warm days come before winter sets in. The majority of those who cultivate bulbs in windows make a failure of it, simply because they will not wait until the bulbs have made abundant roots before they are brought into the warm room. The catalogues direct to plant three Hyacinths in a pot. When the three are so accommodating as to bloom all at the same time, the effect is very pretty, but this rarely happens; one will get much ahead of the others, or else one will lag so far behind that the rest will be out of flower by the time it gets ready to open. Last winter I put a lot of bulbs in a box of earth mixed with moss rubbish, kept them cool and dark until well rooted, and then brought them to the light in a back room. When the flowers were about to open the bulbs were taken up, the earth washed out of the roots without breaking them, and then placed in pots of moss which was kept wet. This method is much preferable to growing the bulbs in moss altogether, or in water, as it produces well developed leaves and flower stems, which are not usually found on plants nourished solely upon water.

SOFT-WOODED PLANTS AS STANDARDS.—Lantanas, Heliotropes, Lemon Verbenas, Geraniums, etc., are usually planted out in spring and allowed to grow in their own way, the object generally being an abundance of flowers. At the close of the season they are found to be too large and too unshapely to house, and they are left to be killed by the frost. By proper care at the start and an occasional pruning during the summer, the plants can be grown as dense bushes or may form pleasing standards. Lantanas and Lemon Verbenas may be grown to a single stem 5 or 6 feet high the first season; they are to be kept over the winter in the cellar, and the next spring the upper branches only are allowed to grow and form a head. These plants trained in this way make fine lawn specimens and will last for years. The oddest thing to grow in the form of a standard or tree is the

Achyranthes, a now common purplish-crimson bedding plant. There was at the Horticultural Exhibition at Boston, this fall, one with a single stem about four feet high, with a regular spreading head, which was a noticeable object.

is an exact representation of a bearing branch from one of Mr. Carpenter's specimen plants.

THE BEET AS AN ORNAMENTAL PLANT.—Beets and Kale play an important part in the ornamental gardening of England. The winters of that country are so mild that these half hardy plants retain their beauty throughout the season. Beauty may seem a misplaced adjective when applied to these plants, but we have had specimens of variegated Kale that were really elegant in both form and color; though we did not know how much beauty there could be in the foliage of the Beet until Mr. William Chorlton, of Staten Island, brought us some specimens of the recent improved varieties. Some of these were of the most intense green, with stalks of clear gamboge yellow, others were a finer purple than Perilla, with crimson stalks, and others presented foliage of various shades of red and purple. We expect to see the beet take rank in our gardens as an ornamental plant.

GRAPE CUTTINGS may be made as soon as the leaves fall, from wood of the present season's growth, rejecting that imperfectly ripened. The cuttings are made of two eyes each, i. e., with an eye at the top and bottom. They are tied up in convenient bundles and put in a moist cellar or buried where they will not freeze, until the ground is ready in spring. "J. J. S." is informed that planting the cuttings where the vines are wanted is not practiced by good cultivators. The cuttings are started in a bed and the next fall the best vines selected and planted out, or they may be heeled-in until spring.



A NEW FRENCH CURRANT—DR. BRETE.

A New French Currant—Dr. Brete.

It is doubtful if we shall succeed in producing a currant superior in quality to the old Red Dutch. The Cherry and Versailles are greatly its superiors in size, but do not equal it in flavor. Each year some new sorts appear upon the catalogues, which, after a trial of a season or two, are found to be but repetitions of old or well-known varieties, or so much like them, that it is not worth while to keep them under distinct names. Mr. Wm. S. Carpenter has for a long time been engaged in testing the new varieties of French and Belgian currants, and thinks that among a large number there are a few that are of permanent value. Among the new sorts he places the Dr. Bréte at the head of the list. He has fruited it for four years, and says: "Bunch long, fruit of the largest size, and first quality. It is a prodigious bearer, producing twice as much fruit as any other currant in my collection." The engraving

THE CREEPING SAXIFRAGE, (*Saxifraga sarmatosa*), sometimes called "Beefsteak Plant," is a very old-fashioned thing, but is nevertheless a capital window plant. It will do best if grown in a hanging pot or basket, so that its singular runners may hang down. Though of modest color, its large pyramid of flowers is beautiful. It may be made to flower by keeping the runners pinched off. It is a good plant to cultivate in a cool room, as it will stand a moderate amount of freezing without injury.

A LILAC BLOOMING IN AUTUMN.—The Bucyrus, O., Journal, gives an account of an experiment by a young lady who plucked all the leaves from a lilac bush. In about a month the shrub had pushed out new foliage and was in bloom. This is just what might have been expected, and nothing wonderful about it.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Home-made Fancy Baskets.

We have already given several illustrations of simple articles of use or ornament which could readily be made by boys and others, who are fond of using the knife. Recently we saw in the store

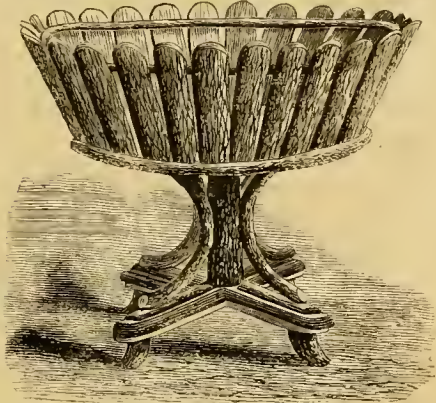


Fig. 1.—RUSTIC BASKET.

of Messrs. B. K. Bliss & Son, a rustic basket which struck us as being very pretty for one made of such rude materials, and we have had an engraving made of it—figure 1. The round bottom of the basket

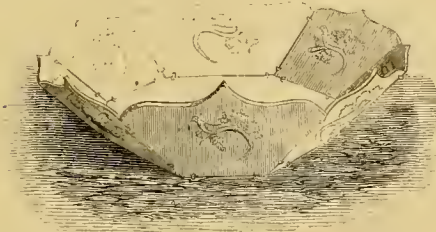


Fig. 2.—CARD BASKET.

and its cross-shaped base are made of common soft pine; the sides of the basket are thin pieces cut from small branches, with the bark upon them; these, which are all of the same size and thickness,

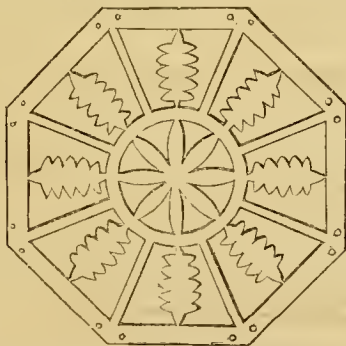


Fig. 3.—BOTTOM OF BASKET.

are tacked to the bottom, and a hoop made of some flexible twig is put upon the outside at the bottom, and another on the inside near the top, and fastened by tacks. The ornamental work around the foot,

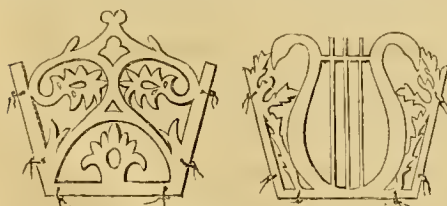


Fig. 4. SIDES. Fig. 5.

as well as the feet, is of bent twigs tacked in place while green, and allowed to dry there. A basket of this kind would serve for growing a few bulbs in moss, or it may be filled with the plants usually grown in hanging baskets, first lining it with moss.

It would not make an inelegant fruit dish. In figure 2 is given one of the imported card-baskets, of a very simple pattern, and easily imitated. They are made of a very white wood, and each piece has a small, gaily-colored bird or flower in its center. Another and more elaborate one is given in figure 3, which represents the bottom, and in 4 and 5, which show the side pieces of two different patterns. The side pieces are joined to the bottom and to one another by means of small ribbons. Work of this kind, if made of white wood, like the holly, should be left untouched, but if colored woods are used, they may have a coating of boiled linseed oil to bring out the color and markings.

The Management of Servants.

BY MRS. H. C. B.

In these days of trouble with servants, a little advice from one who is seldom obliged to make any change of domestics, may be of interest and advantage, especially to young housekeepers.—Be dignified, with that true dignity, which it seems to me, should be a part of every Christian woman's character. Sham dignity is of no use; a servant sees right through it if she knows anything.—Define your girl's duties plainly. When she first comes to you, tell her what you wish her to do. If her work is to be heavy, let her understand it; do not represent it as very light, letting her think, in order to secure her, that she will have a great deal of time to herself.—Be just in your demands. Do not think that a girl must work all the time, because you are paying her good wages and giving her her board. She will do better work and more of it, if she feels that you are willing that she shall have some time for herself.—Encourage her to employ her spare time usefully; but at the same time do not frown upon her going out some times. If a girl knows that you are willing she should visit her friends, she is not nearly so apt to get into the habit of running all the time, as if you were impatient with her and tried to prevent her going at all.—Help her by doing something for her which she cannot do herself, when you have the time to spare, or by teaching her something which she would like to know, as reading, writing, sewing, etc.—But do not help her in her ordinary work, if you wish to keep her a good servant. This may sound unfeeling, but it is not meant to be so. If your girl is sick, help her, but if she is simply in the habit of getting behind-hand, do not assist her in any way. If you have been just in the amount of work assigned to her, insist upon its being done at the right time and entirely by herself. I have seen many a good girl spoiled by being continually helped. I have now a most estimable lady in my mind, whose servants invariably become lazy and shiftless, although she herself is an excellent housekeeper. The difficulty is that she never leaves a girl to do a piece of work all by herself.

For example: instead of telling her girl that setting the table is a part of her work, and expecting her always to do it, she puts on a few dishes herself, then the girl a few more, as it happens; and, when the meal is ready, there is almost always the necessity of calling for several things that have been forgotten. If the girl were taught to be careful, and to feel that she would have no one to help her, the work would be done better. If there is anything about your girl that you do not like, tell her of it kindly, but plainly. Never hesitate for fear of offending—have your girl understand that you are not in the least dependent upon her, but that you would not keep her, if she did not endeavor to please you. The Irish, as a race, like plain speaking.—Talk to your girl moderately of her own affairs, or of anything that will interest her, at the same time be instructive; but do not condescend to gossip with her, by talking of your own private affairs, or those of your neighbors. Check any tendency in her to comment upon the faults and failings in others.—Pay her wages at regular intervals; advise her as to the use of her money, and to invest what she does not need in some safe way. I do not pretend to affirm that all servants would

be made good, by their employers acting upon these suggestions; but I do think that the mistress is often very much in fault, sometimes in one of the particulars I have mentioned, sometimes in another, and often in all, and more; and I feel confident that, if there were more women, who made it a Christian duty to be good mistresses, there would be more good servants.

Chicken Croquettes.—Mr. A. W. Harrison, the efficient Secretary of the Penn. Horticultural Society, is a manufacturer of flavoring extracts, and in the Catalogue of his productions, gives several recipes for preparing delicacies. Among these is one for Chicken Croquettes, which, in Philadelphia, are highly prized for evening parties and other entertainments; that they are most excellent we can testify from experience. "Boil one medium-sized chicken in as little water as possible until tender; remove, and reduce the broth down to a cupful, which will be a jelly when cold. Chop the meat,—rejecting the skin,—as fine as possible. Chop fine half a shallot, fry it with two ounces of butter, add a tablespoonful of flour, stir half a minute, add the meat and broth, a half teaspoonful of finely chopped parsley, half a sweetbread, or as much calves' brain, previously boiled tender, salt, pepper, and a few drops of Extract of Nutmeg, stir two minutes, take from the fire, add the yolks of two raw eggs, mix well until it is a gelatinous mass. Spread on a dish, and when entirely cold, mould into forms, of one heaping tablespoonful each, shaped like a sausage, a biscuit, or a small sugar loaf; dip into beaten egg, and roll in bread crumbs twice, fry gently in boiling lard, and serve on a napkin, with sprigs of parsley. Care should be used in frying to prevent falling to pieces." As shallots are not always obtainable, a piece of onion the size of a hickory nut may be substituted. Our own notions would lead us to omit the sweetbread and its substitute.

A Few Words to the "Men Folks."

BY MRS. H. M. ROBINSON, COLUMBIA CO., PA.

The article in the Household Department for October, under the head "An Overworked Farmer's Wife," is far too true a picture of many farmers' wives' daily lives. I wish every man who has a wife, and reads the "Agriculturist," would take that piece and sit down and carefully read it over, and see how much it differs from the history of the labors his wife has to perform. I think nine out of every ten, will find that all the things mentioned there have to be done in their homes, and yet they never thought their wives had so very much to do. No matter how busy their wives may be, until 9 or 10 o'clock at night—running first this way, then that, to do something to make them and their families more comfortable, and then being broken of their rest night after night for months, perhaps years, with cross children—they think it is n't like men's work! "If women had to hold the plow, and swing the scythe, in the hot sun, they'd see a difference between it and sitting in the house in the shade."

But, husbands, allow me to ask you a few questions and you may answer them when you have had enough experience in "women's work" to be able to give just answers. Which would you prefer—holding the plow all day, or doing the many chores you know have to be done every day in every house, many times with a child in your arms, and then to be kept up and down with the child all night, with no hope of rest until it is large enough to know better than to cry? Which do you think requires the most steps, patience, and labor—to raise twenty-five bushels of potatoes, or to bring them from the cellar, a few quarts at a time, and pare, wash, cook, and serve them? To raise an acre of wheat—or bake it into bread, a few loaves at a time, when every loaf requires at least six or eight hours' careful watching and tending to fit it for the table? Which requires the most skill—to get the milk into the milk-pail, or to go through the several processes required to make the peculiar "rosy" flavored

butter, your wife sets before you? And then after you have sent it to market and received five or ten cents more per pound for it than the market price, because she took such extra pains with it, what share of the pay are you *willing* to give her to spend as she thinks best? When there is an extra week's work on hand, how willing are you to pay out a few dollars of *her* hard earnings to secure help for her? When you want an extra hand in the field, does *she* object because it will cost two or three times as much as it would to secure the same amount of help for her? And when there are three or four "men folks" in the house, do *they* complain if she calls on them to help her do a few chores?

Do you see that your wife's health is gradually, but surely giving way, and that when it is once gone it can never be restored? Do you realize that the time is coming when you will pay for all this short-sightedness in the way of doctors' bills, nurses, and hired help? When your wife is laid in her last resting place, and it is too late, you would be willing to give all you possess if it would bring her back to your home! There are thousands of farmers' wives to-day, killing themselves with hard work, because both they and their husbands *think* they cannot afford to hire help in the house; but they will see the time when they would be willing to give large sums to have their wives' health back again, but it will be when it is too late.

Now I am going to say a few words to your wives, but when you have read them don't say "Pshaw, that's easy enough done," and think it is not necessary for her to have any help, for it is much more difficult to perform the duties I shall mention here, than you suppose, besides the dozens of chores to be done every day, that I shall not think of; but whenever she calls on you or one of the other "men" for help, be sure she receives it, and my word for it, you will not be sorry in the end.

The woman from Oregon says, after naming some of her trials, and asking many questions, which you can read by referring to the Oct. No., "Now if any one will tell me all these things I shall be very thankful."

I shall not attempt to tell her *all* those things, but will try to tell her how I think I would do; and I have had some experience in doing both dairy and house-work alone, but not with quite so much of a family as she has.

The more there is to be done in a house, the more necessary it is that there should be a system—a time for everything, and everything in its time.

If I had the work of a dairy and family to do, "*besides waiting upon three men and an occasional hired man,*" I would arrange my work something in this manner; I would not skim milk but *once* a day. There is but little if any difference in the quantity or quality of butter made from cream skimmed from milk just "turned," or after it is "thick," and the butter comes much better if the cream is taken from the milk and mixed together to stand awhile, before churning; it will all become sour alike, and will all come at the same time.

I should detail one of the "three men folks" for my own use every morning until breakfast, or until the churning was done, and the wood-box and water-pails filled. They may complain that they haven't time to do these chores, but if they have not you certainly have not.

The first thing in the morning, I would put the cream in the churn and set one of the men to churning, (it is better to have the same one every time); then work and pack butter, and set pans for the morning's milk, so that when the men come with it they can strain it with little trouble, and take the empty pail wherever you want them to wash it. Then I would put over my breakfast; the potato kettle where it is very hot, and my spider of meat where it is not so hot, and by the time you have the children dressed, and table set, the breakfast and churning will be done, and all hands ready to enjoy the meal; but before sitting down, do not forget to put an extra stick of wood in the stove, and a good supply of dish-water where it will heat. Breakfast over, clear away the dishes, and wash and salt your butter, and wash the churn and breakfast dishes, sweep dining-room and kitchen,

and stir up beds, and you are ready for the day's business, and it ought not to be later than eight o'clock. By this time you should have decided what you will have for dinner, so that when the proper time comes you will be ready to prepare it.

Immediately after dinner, skim all the milk that will need skimming before the next day, and set pans for the evening's milk, so the men can strain it; and if you work your butter twice, work the morning's churning, and when the pans are washed and set away you can bid good-by to the dairy work for the day. When you have finished making your beds, pick up all bits of straw or coarse dirt that may be scattered on the floor, and in this way you can prevent the need of sweeping more than once a week. Before going to bed, see that potatoes and meat are all ready for the kettle and spider.

I would wash on Monday, bake Tuesday, iron Wednesday, mend Thursday, do my general baking Friday, and Saturday give the house a good thorough sweeping and dusting, and wash conspicuous spots from the paint. Saturday morning I would change the bed linen, and in the afternoon wash and dress myself and children in clean clothes, and put all soiled clothes in tubs in the wash-room; the brown and dirtiest by themselves in one tub, and the white or cleaner ones in another. When the men get through with their work, which should be early on Saturdays, have them wash and change, and then put their clothes with the others. Have the boiler filled with good soft water, and soap enough to make a pretty good "suds," and while you are doing your dinner work on Sunday, have the boiler set on till the water is warm (not hot), and pour it over the clothes in the tubs, and let them stand till morning. You will be surprised to see what a help it is to the washing to have the clothes all picked up, and the dirt soaked loose. I have tried both this way, and letting the clothes lie in the closet till Monday morning, and I really think it makes half the difference in the work of getting them clean. On Sunday go to church, and take all the rest you can.

When coffee is used daily, it saves trouble to grind and settle a quantity at a time. Use one whole egg for every pint of ground coffee, stir well together, and bottle for use. I find a self-sealing fruit jar very convenient for this purpose.

If your sewing is more than you can get along with, in justice to yourself, select some of the most difficult pieces and hire them done. It will cost you something, but if you try to do it yourself it will be far more expensive in the end.

When you have company just to spend the afternoon, give them as much of your time as possible. On your general baking day, bake as much cake as you will need during the week, and put it in a covered stone jar in a cool place. Then when your company comes give them a good cup of tea, bread and butter, a piece of your cake, and *one* kind of fruit. If you can give them more of a variety without trouble, well and good, but if not do not worry yourself about it, for sensible people will prefer your company to your extra victuals. If you have company to stay a longer time, probably they will enjoy your society in the kitchen as well as anywhere, and expect to receive such fare as your time and means will allow you to provide.

Hints on Cooking, Etc.

Bread Making.—*"Julia,"* Greenwood, Mo., sends the following: Take 1 quart of butter-milk, bring to a boil, and seal enough flour to make a stiff sponge; after it is cool enough put in $\frac{1}{2}$ pint of yeast, stir well, and let rise over night. The first thing in the morning pour in 1 pint boiling water or sweet milk, and make up the bread in half an hour. Let the bread rise 3 hours and make into loaves. Mix with sweet milk or water.... Another way: Pare and slice about 1 quart of potatoes, and boil and mash well; when cool enough for yeast, if too thick, thin with the water the potatoes were boiled in, stir in a few spoonfuls of flour and the yeast; let rise over night, or if in a hurry it will do to start in the morning, and make up the bread

about 9 o'clock. This quantity will make 6 or 8 loaves. Bread needs more kneading than many suppose, it makes it whiter to work the dough down once after it rises.

Curing Hams.—The following is communicated by Mr. Geo. A. Griffin, who has long practiced this method of curing with excellent results. As soon as the animal heat is well out, rub the pieces on every part with salt and lay them on a shelf or in a box or barrel, as convenient, for one week. Then rub with finely pulverized salt-petre (1 oz. to a 20 lb. ham), and immediately follow with another dressing of salt as at first. Repeat at the end of 2nd, 3d, and 4th week the rubbing with salt alone. At the end of 5 weeks, wash in warm water, hang to dry for 24 hours, and smoke.

Spiced Beef.—Mrs. L. A. G. Chop fine the tough ends of two very large beefsteaks, and a piece of raw suet about as large as half an egg, season with pepper and salt, and a little dried summer savory; then add 2 well beaten eggs, with about a half pint of dry bread rolled fine, or as much rolled crackers; 4 or 5 tablespoonfuls of sweet cream, and a piece of fresh butter as large as an egg, make into a long roll with flour enough to keep it together, put into a baking pan with dripping as large as half an egg, and water enough to keep from burning. Bake as you would a roasting piece of beef; when cold slice thin for the table. Some eat it with vinegar.

Mince Pies.—Mrs. L. A. G. Take $1\frac{1}{2}$ pints of chopped, boiled meat, $2\frac{1}{2}$ pints of chopped apples, $1\frac{1}{2}$ pints of sugar, $\frac{3}{4}$ of a pint of vinegar, $\frac{1}{2}$ pint of the broth in which the meat was boiled. A large $\frac{1}{2}$ pint of raw beef suet finely chopped, $\frac{1}{2}$ pint of brandy with half a pound of raisins, seeded and cut in half, 5 tablespoonfuls of ground cinnamon, and $\frac{3}{4}$ of a tablespoonful of ground cloves. Mix all well together, and put into the crust and bake. It is well to only put in half the brandy when you mix it, then put one or two tablespoonfuls in each pie just before it is baked. This quantity will make six pies.

Pumpkin Pies.—By Mrs. L. A. G. One quart of sifted pumpkin, beat 9 or 10 eggs, yolks and whites together, stir them well into the pumpkin, add 4 even tablespoonfuls of ground ginger, $2\frac{1}{2}$ tablespoonfuls of ground cinnamon, 1 even teaspoonful or less of salt. Stir all well together, then add 2 quarts of sweet milk, and make about as sweet as for custard. Bake with one crust. This will make 4 pies.

Recipe for Sponge Cake.—By Mrs. G. B., Hicksville, L. I. 1 pound of sugar, $\frac{1}{2}$ pound of flour, 9 eggs, the juice of one lemon, and grated rind, and a pinch of salt. The yolks of the eggs and the sugar should be beaten together, the whites separately. The whole should then be put together, the juice of the lemon added last. No soda or cream tartar should go into sponge cake as it makes it dry. The lemon is very essential, not only for the flavor, but to make it light. The quicker it is beaten together, and put in the oven the better it is. The oven should be pretty hot.

Carrot Pies. Mary M. Clark, Kansas City, Mo., says: "Select Orange carrots, scrape and boil them and press through a sieve; to a pint of the pulp add one quart of milk, six eggs, two tablespoonfuls of melted butter, one grated nutmeg and sugar to taste. Other spices may be added if desired. Bake in one crust."

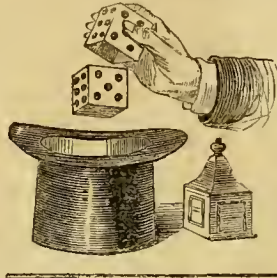
Washing Fluid Wanted.—Some of our correspondents ask if there is any compound which is useful as an aid in washing. Will those who have satisfactorily used washing fluids give us some account of them?

Veal Omelette.—Mrs. L. A. G. 3 lbs. of chopped veal, 2 eggs beaten; 1 tablespoonful of sweet cream, 1 tablespoonful of salt, 1 teaspoonful of ground pepper, 6 tablespoonfuls of rolled crackers, 1 teaspoonful of thyme or summer savory. Make into a long roll, put into a dripping pan with water enough to keep from burning. Bake *well*. Some add a slice of salt pork chopped,

BOYS & GIRLS' COLUMNS.

Magicians' Tricks.

An exhibition by an expert performer of slight-of-hand, or legerdemain,—which is the French for the same thing—is exceedingly amusing. Things are disposed of in a wonderful manner, to appear in a manner equally strange. Handkerchiefs are cut up and burned, to reappear whole from the ashes. A watch is pounded up in a mortar, and the pieces fired from a pistol, and the watch appears whole and in good order in some out-of-the-way place. Some of these tricks display a great amount of ingenuity in contriving, and skill in executing them. Of course, they are all illusions, but they are interesting as showing how readily our senses can be deceived. We know a distinguished professor who takes pains to visit such performances, for the purpose of exercising his acuteness in finding out how the tricks are done. The performer makes a great deal of talk, and is constantly trying to fix the attention of the spectator's upon some unimportant thing, while he is doing something which he would not have seen. One of the most common tricks called the dice trick, will show how a large class of these deceptions are played. The performer has a large dice which he places in a hat to show that it will go into it, and then takes it out again. The dice is put on the table and covered with a leathern case, and then is told to pass into the hat. Upon lifting up the case there is nothing of the dice to be seen, but upon turning over the hat, it is there. The trick when seen for the first time by those not familiar with such matters, is surprising. The engraving shows how it is done. The dice has a tin cover which fits it exactly, and is painted like the real one, the real dice and the false one over it are placed in the hat together, and when the performer appears to take it out again he only slips off the false, and leaves the solid one in the hat. The false one or cover appears to the spectators to be solid, as it is held so that the bottom cannot be seen. The leathern cover is placed over this. When the cover is lifted the performer slightly squeezes its sides and lifts the false dice at the same time, and there appears to be nothing under it. Both the interior of the false dice and that of the cover should be painted black. The engraving shows the true and false dice, the hat and cover.



TRICK WITH DICE.

The performer has a large dice which he places in a hat to show that it will go into it, and then takes it out again. The dice is put on the table and covered with a leathern case, and then is told to pass into the hat. Upon lifting up the case there is nothing of the dice to be seen, but upon turning over the hat, it is there. The trick when seen for the first time by those not familiar with such matters, is surprising. The engraving shows how it is done. The dice has a tin cover which fits it exactly, and is painted like the real one, the real dice and the false one over it are placed in the hat together, and when the performer appears to take it out again he only slips off the false, and leaves the solid one in the hat. The false one or cover appears to the spectators to be solid, as it is held so that the bottom cannot be seen. The leathern cover is placed over this. When the cover is lifted the performer slightly squeezes its sides and lifts the false dice at the same time, and there appears to be nothing under it. Both the interior of the false dice and that of the cover should be painted black. The engraving shows the true and false dice, the hat and cover.

The Doctor's Talks—About Making a Fire.

The methods of making a fire that I have already described, all passed out of use long ago—probably before any of the boys and girls who read this were born. Now that I come to describe the methods at present in use—every one of you has guessed that I mean friction matches—I find a difficulty. I have to speak of phosphorus, a substance so remarkable that it is not easily described, and so dangerous to handle, or to have anything to do with, that I cannot advise you to get a piece and examine it for yourselves. Yet every boy and girl always carries a considerable amount of this very dangerous and poisonous article about, and even takes it to bed with them. "Where?" In your bones. Bones are half their weight—more or less, in different animals and different bones—of phosphate of lime, and this, to speak in round numbers, is about one-fifth of its weight of phosphorus. The phosphorus is got out of the bones by a very complicated chemical process, which could not be easily explained. The material as it comes to us is in sticks somewhat larger than a lead pencil, and if fresh, it looks much like sticks of barley candy, and is so soft that it can be cut with a knife. What is the strangest thing about it is the ease with which it takes fire. A slight rubbing will inflame it, and if exposed to the hot weather of summer, will take fire at once. You see I was right in saying that phosphorus was a dangerous thing, and you have wondered how it is kept and handled. It is kept under water, and it is cut under water. Many persons have been badly burned by handling it, and I recollect of a fire which was caused by it. The tin-can in which the phosphorus was kept became rusty, and the wafer gradually leaked out; when warm weather came

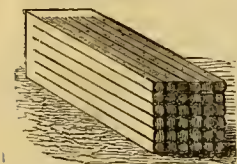


Fig. 1.—BLOCK MATCHES.

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on, the phosphorus caught fire, and much damage was done. Phosphorus was discovered 200 years ago, but it is within my recollection that people found out how it could be made useful in preparing matches with which to make a fire. One of the earliest ways of using it, was to place some phosphorus and wax in a bottle which was set in warm water until the two melted, the bottle was then turned around so that on cooling, the mixture would cover the inside of the bottle like a coat of varnish. A common sulphur match being thrust into the bottle, and pulled out again brought out a little phosphorus which took fire, and thus lighted the match. After a while the phosphorus was applied to the ends of matches, and to do this it had to be so prepared that it would only take fire by a smart rub. The first step was to powder the phosphorus. You will wonder how a waxy substance which takes fire so readily can be powdered. The phosphorus if dropped into hot water will melt. If a bottle containing hot water and melted phosphorus be shaken violently until cold, the phosphorus will be in a fine powder. The powdered phosphorus was mixed with gum water or glue, a little saltpetre or chlorate of potash; and with this mixture the ends of sulphur matches were tipped. When dry they would ignite by rubbing them against any hard substance. Since the original friction matches or "loco-focos," as they were first called, were invented, various improvements have been made not only in the composition but their shape. Some of the early matches were made in blocks like that shown in figure 1; the block was sawed in two directions, but not quite through, and the matches were left joined together at one end, and were separated by breaking them off as wanted. Another style was to have the wood sawed like a comb, as in figure 2. This was an improvement on the block style. Now the best matches are made from round sticks neatly made by machinery. When we compare the ease with which one can get a fire, by a slight blow of our common matches, with the laborious method of the savage with his two pieces of wood, or even with the flint and steel, we can see that great improvements have been made. Indeed, many of our conveniences of life which are so common to us that we scarcely give them a thought, are as much better than those of our grandparents as the friction match is superior to the flint and steel. Our ways of getting a fire are now very easy, but it must be remembered that the danger of accidental fires is much increased. No trouble could come of the flint and steel, but carelessness with matches has destroyed many a dwelling. Never leave a match lying about loose, but while you regard it as a friend, remember that it can be a dangerous enemy if some accident wakes up its power that sleeps in the little matter upon its tip. Moreover recollect that the substance upon the ends of the matches is a deadly poison when taken into the stomach, and see that they are carefully kept out of the reach of children too young not to know the serious results that might follow from putting them into their mouths.

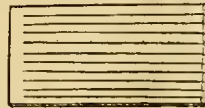
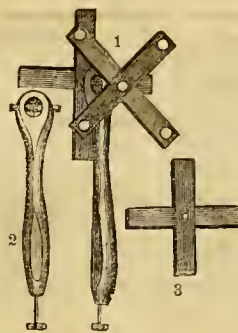


Fig. 2.—CARD MATCHES.

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A Pleasing Whirligig.

Here is a chance for boys who like to exercise their skill in toy-making. The central figure, 1, shows the toy complete. It is a handle which supports two wind-mills or crosses, just as you choose to call them. A string runs through the handle and fastens to a button at the lower end; by pulling out the string the mill revolves; the string goes back again, and is to be pulled out again, and so by a series of pulls the arms will revolve very rapidly. Figure 2 shows the handle. It has at its top a large hole, and crosswise of this another hole, through which passes the shaft or piece which holds the two mills; besides this, it has a small hole throughout its whole length through which the string runs. One of the mills or crosses is shown in figure 3. The whole thing being put together, and the string wound up on the shaft, a pull at the string unwinds it and causes the crosses to go around, these get so much momentum, or head-way as the boys say, that they keep on moving after the string is unwound, and have force enough to wind it up again, though in a different direction from what it was before; the next pull reverses the motion, and so on. If the arms



WHIRLIGIG.

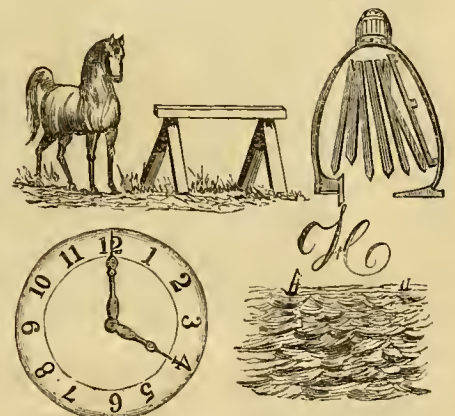
at the string unwinds it and causes the crosses to go around, these get so much momentum, or head-way as the boys say, that they keep on moving after the string is unwound, and have force enough to wind it up again, though in a different direction from what it was before; the next pull reverses the motion, and so on. If the arms

are of some dark color with white spots on them, the effect will be all the more pleasing. A toy like this would be a nice thing for an ingenious boy to make for a holiday present to some of his younger friends.

Making Collections.

Many boys and girls take a fancy to make collections of something. Some collect postage stamps, others coins, and we have seen very large collections of buttons in which there were no two alike. The desire to make as large a collection as possible, without regard to anything else, we do not approve of; but it is very pleasing to see young people collecting specimens which shall teach them something. A collection of postage stamps made for the sake of getting the greatest possible number, is of no more use than so many pieces of newspaper; but if one will read about the country to which each stamp belongs, then something interesting and useful may come of this postage stamp mania. So with coins—collections of which, at least the foreign ones, very few young people are able to make. These can lead to historical studies. After all, we prefer much to see young folks take to collecting natural objects. Those of you who live in the country can find an abundance of things more interesting than postage stamps, or even coins. We once saw a large collection—we have forgotten how many specimens, of all the different kind of beans—a dozen or so of each kind put in a neat little paper tray, and correctly named. A nice collection would be all the different kinds of wheat—indeed, we should much like to have such a collection ourselves. Then how interesting it would be to have specimens of the seeds of every kind of troublesome weed. The eye having become accustomed to the appearance of these seeds, would be able to detect them at once among seed grain, or other kinds of seeds. Another collection we would suggest to the older boys, is one of all the native woods of the farm, or the neighborhood: very few people know any but the larger kinds of wood. A collection with specimens to show the bark, the end of the wood and the grain would be something worth looking at. Then there are the insects which are injurious to crops, which would make not only a useful but a really handsome collection, and would lead to a study and close observation of the habits of the insects. Of course, one will take a fancy to one thing and one to another, and in a family of several boys and girls, a museum may be formed which will be worth showing to others. Those who are old enough to study plants, minerals, insects, etc., will, of course, make collections of specimens to illustrate these studies. Our object was to suggest something that seemed to us better worth doing than accumulating postage stamps or buttons.

New Puzzles to be Answered.



No. 364.—A quotation from Shakespeare.

No. 365. *Arithmetical Problem*.—Mr. Jones having 100 yards of earth to dig, A offers to dig it for one dollar per yard, but just as Jones is about accepting A's offer, B comes along and says he will dig it for 75 cents per yard. Jones, by way of compromise, tells both A and B to go to work, but that each must only dig as many yards, at his rate, as will give each the same amount of money. How many yards must each dig, and what is the amount that each should receive?



No. 366. *Illustrated Rebus*.—A well-known truth poetically expressed.



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M. R. CRANDALL'S DREAM.—DRAWN BY F. BEARD.—Engraved for the American Agriculturist.

Few men have afforded more pleasure to young people than Mr. Crandall, who invented the Building Blocks, which we described and figured when they first appeared. They are made so that the ends lock into each other, and the structures built of them not only do not fall down, but are so strong that they may be lifted and carried about. As a toy they are nearly perfect, and their

great excellence is owing to the care given by the inventor in contriving the machinery to make them, and to make them just right. Mr. C. has his mind so much upon Building Blocks, that one of our artists is disposed to think that he dreams of them, and has represented in the above engraving what he supposes Mr. C. saw in the dream from which he has just awoke. We rather

suspect that the artist has some time in his life read the amusing travels of Gulliver; as he has introduced a large number of Lilliputian people who are at work bombarding and attacking in various ways the ingenious inventor, from fortifications, and by means of scaling-ladders, etc., made from his own Building Blocks. Orange Judd & Co. have them. See advertisement pages.

The New York Sun;—Its Rise, Progress, Character, and Condition.

BY OLIVER DYER.

On Tuesday morning, the third day of September, 1833, the New York Sun first rose, from a dingy office at No. 222 William street, upon the inhabitants of New York City. It did not then, as now, "shine for all, price two cents;" but shone for only a limited number, at one cent a shine, and was rather a feeble bantling, diminutive in size and measly of countenance; but so, also, at his birth was George Washington.

It is almost, if not quite impossible for a New Yorker of the present day, who was not an inhabitant of the city thirty-six years ago, to form any idea of the New York upon which the SUN rose on that Tuesday morning in September, 1833. There was not only no Central Park then, but there was not even a Madison Square, or a Madison Avenue, or a Union Square, or a Fifth Avenue. There was no Croton Water; sixpenny dinners were all the go among the million; and two jurors were fined ten dollars each for falling asleep during the trial of a cause in the Supreme Court. General Jackson was then in the first year of his second Presidential term, and the United States Bank war was raging with consuming ferocity. So fierce were partisan animosities, and so petty the notions of even intelligent people, that in some cases Whigs refused to purchase their groceries of Democrats, and Democrats would not buy their dry goods from Whigs. James Watson Webb discharged old Uncle McKee, a veteran type-setter, from the office of the *Courier and Enquirer* because the old man sympathized with General Jackson, and then came out with a justificatory editorial in which he said "We wish it to be distinctly understood, that whenever we shall have occasion to reduce the force in this office, the reduction will be made from the ranks of those who differ from us on questions of national importance!"

Can any man imagine the editor of a metropolitan journal of the present day inquiring into the politics of a compositor in his office? or conceive it possible for a man of ordinary decency thus to advertise his partisan folly and petty vindictiveness? No, thanks to the Independent Press (of which the SUN was the pioneer and the *Herald* a mighty member) and to Horace Greeley more than to any other man in America, the day for the exhibition of such revolting folly has passed, never more to return so long as the SUN shall shine.

Benjamin H. Day, printer, was the founder of the New York SUN. Mr. Day has been dead many years, as has also his successor, Moses Y. Beach. Mr. Beach laid the foundation of the SUN's permanent growth and fortune. He was a man of sagacity and enterprise; and before the day of railroads and telegraphs, he made pony expresses and carrier pigeons do the work of steam and lightning as far as energy and skill could compass such results with such means. After his death, the work which he had so well begun, was assumed, and carried on by his sons until within a recent period.

But the SUN of the past is a thing of the past; and it is of the SUN of to-day—the SUN not of local but of national reputation, owned by the SUN PRINTING AND PUBLISHING COMPANY, and edited by CHARLES A. DANA, that we set out to write.

The Sun Company was organized in 1867, and purchased the SUN Newspaper in January, 1868. The paper was issued for a few weeks from the old SUN office at the South-west corner of Fulton and Nassau streets, and until the old Tammany Hall building, at the corner of Frankfort and Chatham streets, which had been purchased by the Company, could be transformed into the model newspaper office which is accurately pictured to the eye, by the cut above. This edifice was completed in the month of January, 1868; the SUN was immediately thereafter removed thither, and it now daily radiates its beams from the old site which was aforesaid wont to glow with the camp-fires of the Red Men of Tammany, who themselves did glow with the fire-waters of the palaces, and dance the war-dances of their people with aboriginal exhilaration and agility.

The daily circulation of the New York SUN is now considerably over 70,000 copies; but for convenience sake, we will call it only 70,000. And the problem is, how shall 70,000 SUNs be produced every morning before breakfast, and laid on our breakfast tables for two cents a copy?

A stupendous piece of business, not only in its totality, but also in every one of its details; and that the reader may understand how this business is brought to pass, we will in the first place state how the SUN is made, and

This is situated on the third floor, and consists of a suite of four spacious rooms, forming an L, fronting on Printing House Square, and running along Frankfort street, the whole depth of the building, from front to rear. We enter the rear room, which is occupied by the reporters and editorial attaches of the SUN office—all young men, full of vitality and enthusiasm, who love their work and are proud of their paper. They shirk nothing, but are always ready to start for Coney Island or California, for Alaska or Anstralia; to take part in a railroad collision or a steamboat explosion; to go down in a diving-bell or up in a balloon. These young men contribute much to the vivacity and vitality of the SUN, and are to be estimated among the elements of its success.

From the reporters' room, we pass into the apartment of the MANAGING EDITOR. (See cut on next page.)

The position of Managing Editor on the SUN is a most important and onerous one. The gentleman who holds that position not only performs the functions of that office but also those of the City Editor and the Day Editor. He has to keep a wide-awake eye not only on the entire city, but also on the Union at large. The whole reportorial force of the SUN is under the Managing Editor's command, and he wields it with consummate skill. He prides himself upon being able to take a hand at anything appertaining to his department; and if he strikes an important trail and no reporter is at hand to follow it, he will himself run the game to earth. It was thus that the trail of the gold conspirators was struck—a "strike" which resulted in the SUN's smoking that wily old fox Corbin from his hole, and driving General Batterfield from the Sub-Treasury.

The members of the editorial force of the SUN, sixty-two in number, are loyal to the paper, and to one another, from the Chief to the lowest member of the staff. The reporters stand by the SUN; the Managing Editor stands by the reporters; and the Editor-in-Chief stands by the entire force. This is an important point, and gives a unity, and enthusiasm, and self-reliance to the men which nothing else could inspire. It is a common thing for City officials whom the reporters have exposed, to procure false affidavits charging them with all manner of crimes and derelictions; and armed with such baleful weapons they enter the editorial office and seek to have the reporters discharged. The Managing Editor of the SUN always gives such visitors a dose which sends them from the office with a flea of unusual size and activity behind each ear; and if, as it sometimes happens, one of the rebuffed applicants has the temerity to appeal from the Managing Editor to the Editor-in-Chief, he is apt to find the fleas suddenly turned to wasps.

With the exception of such persons as the Editor-in-Chief admits to an audience, the Managing Editor of the SUN has to meet all inquirers, and pacify or discipline all grumblers, and dispose of all comers who, having axes to grind, visit the editorial rooms of the SUN for the purpose of having them brought to an edge.

It must be apparent to every one that the man who can fill such an office as that of managing Editor of the New York SUN with comfort to himself and to those who approach him, must possess an inexhaustible fund of patience and good nature, and have rare executive faculties. These qualities the Managing Editor of the SUN possesses in such an eminent degree that he steadily bears his burdens with elasticity and cheerfulness; and yet we have sometimes thought that the genial smile which always stands porter to his countenance, occasionally exhibits an air of fatigue, and looks as though it would like to nestle away in the inmost recesses of his silken moustache for a good long rest.

Another important member of the editorial force of the SUN, is the NIGHT EDITOR. The Night Editor comes on duty at four o'clock P.M., and stays till the last page is made up, ready for the stereotypers. He finds out what has been done by his associates before he came in; looks over the proofs, makes needful corrections and decides what must go in the paper and what can be omitted; examines and condenses correspondence which comes by the night mail, and also the late telegrams; writes notices of important matters and gives directions as to



THE SUN BUILDING.

carried on, and describe the machinery and the mystery of its manufacture.

When one enters the first-floor corner door of the spacious and elegant edifice, which is represented by the preceding cut of the New York SUN Building, he finds himself in

THE PUBLICATION OFFICE

of the establishment. This is a spacious room with lofty ceiling, running the whole depth of the building. It is divided into a front and rear office by a counter stretching across the centre, from side to side. In the front office are desks at which advertisers can write or modify their advertisements. One can hardly enter this office at any hour between 8 o'clock in the morning and 10 at night, without finding it alive with employees and customers. There is a constant rush of persons bringing advertisements, and coming for answers to advertisements, and calling to purchase the SUN or to subscribe for it, and seeking information or bringing information; altogether presenting an animated spectacle, which is fairly represented in the following picture of the scene.

The rear office in the Publication Room is fitted up with desks for the cashier, advertisement clerks, mail clerks, and other employees, and with the ponderous safes of the establishment. It also contains the inner and private office of the publisher, Isaac W. England, Esq., who, though not old in years, is a veteran in newspaper affairs. Mr. England is a stockholder in the SUN, and cherishes an enthusiastic affection for the paper and the enterprise, which vitalizes and reinforces all his faculties, and enables him to thrive bodily on his enormous labors, as well as peculiarly on his enormous profits.

Having taken an account of stock in the Publication Office, let us now ascend to the

EDITORIAL DEPARTMENT,

or "Brain Box," as printers call it, of the establishment,

the nature and length of late reports, and fixes up news-matters outside of the local departments. The Night Editor holds a position of great responsibility; inasmuch as, with the exception of such articles as the Editor-in-Chief or the Managing Editor has marked "Must"—which means that articles thus marked *must go in*—he has absolute control of the contents of the paper; consequently, on his judgment in selecting articles to go in, the character of the paper of the next morning in a great measure depends.

In addition to the foregoing, there are the Financial Editor, the Political Editor, the Market Editor, the Literary Editor, the Musical Editor, and the Mail and Weekly Editor, whose several functions are indicated by their titles. Then there is the Ship News, and the Telegraphic News, furnished by associations, by correspondents, and by agents. Then there are the Special Correspondents stationed in the important and pivotal cities of America and Europe. Then there is the army of Voluntary Correspondents which the enterprise and liberality of the *SUN* have called forth, "and which covers the land for multitude." Nothing of importance can occur anywhere, that some friend of the *SUN* will not at once telegraph to it, or describe by letter in case there be no telegraph station in reach. A man came from Staten Island one night not long ago, after the ferry-boats had stopped running, to bring the *SUN* news of a fire which was of importance, hiring a boat and rowing all the way; and verily he had his reward. Liberal pay inevitably awaits all such voluntary news-senders or news-bringers, at the *SUN* office.

And still further: In addition to all the aforementioned persons, there are gentlemen of high culture and special gifts on the editorial pay-roll of the *SUN*, who constitute a powerful force, and are able to furnish, on call, articles of the highest merit on any subject which it may be desired to discuss in the columns of the paper.

We have still to mention the most important member of the editorial force of the *SUN*, to wit: Charles A. Dana, Esq., the Editor-in-Chief, whose function is one of supreme importance. He must hold the entire force in a firm but elastic grasp, marshal all its diverse elements into harmony without impairing their individualities, and give consistency and unity to the general sweep and purpose of the journal. He must scan, day by day, the events of the world, and single out for publication and comment those which are either of the most general or special importance; and indicate to his subordinates what they are severally to write about, what the scope and tone of their articles shall be, and what shall be the policy of the *SUN* on every subject; the general intent being: That the *SUN* shall be independent of party, aiming always to bring out the truth, no matter who may be helped or hurt by its publication; to support honest and capable men for office, no matter to what party they belong; to secure the enactment of good laws, no matter by whom they are proposed; never in any case to admit into the columns of the paper any thing that is contrary to public or private morality or which cannot be freely read in the family circle; and

always to maintain an independent attitude in the discussion of religious questions, treating all sides with fairness and giving all sides a hearing, and endeavoring to measure and judge them all by the standard of the divine laws.

Mr. Dana is one of the largest stockholders in the Com-

an audacious and plucky newspaper belligerent, but fights without malice, and is a generous conqueror; receives the hardest blows with serenity of countenance and of spirit, as though he heard gentle angels whispering, saying: "Peace, Charles, prithee peace! Possess thy soul in patience and bide thy time, for that vain man weareth a scalp wherewith, in the Providence of God, thou shalt ere long adorn thy wig-wagon!" and he doth possess his soul in patience, and he also bideeth his time; and finally, like a true journalist, he conspicuously takes the scalp of the offender at the very time it would be most awkward for the victim to appear in society bereft of that ornamental hereditament.

Mr. Dana is a hard worker. The *SUN* is his pet. He loves it and is proud of it. He keeps a vigilant eye upon everything; and, like his subordinates, is ready to do any piece of work whatever, that may come to his hand. His literary and editorial exactness is surpassingly prompt and decisive. This helps him to go through his work with a celerity which relieves it of much of its burdensomeness. He is genial and companionable with his assistants; but to one can more effectively assume the imperial *je* when distinctions of position should be made apparent and the lines of order should be sharply drawn.

And now let us see how all the work done by this army of accomplished and industrious men is finally brought to a focus in the pages of the *SUN*.

It is ten o'clock at night, as we mount to the editorial rooms. The apartment of the Editor-in-Chief, in the northeast corner of the edifice, looking out upon the City Hall Park, is all aglow. Ordinarily he only comes down at night to take a general survey of affairs and look over his proofs, but to-night, matters of uncommon importance have come to hand, and he is at his post, with a full staff, at a later hour than usual.

Everybody seems to work as though under whip and spur. Reporters from the public meetings, fires, fights, and scenes of accident and crime, rush in with their notes and set to work as if for life. Messengers hurry to and fro from telegraph offices. Other messengers likewise hurry to and fro from divers other points. Visitors come hurrying in, all out of breath, wanting to see the Managing Editor, or the Chief, on matters of pressing importance; and all are disposed of with promptness, celerity and courtesy. Mangled and tumbled papers from the city, the country, and the uttermost parts of the civilized world, lie in heaps upon the floors. The pens scratch; the scissors click; the Chief's bell rings sharply out for the boy; and the "condensers"—three men whose only business is to take the core out of correspondence, reports, and extracts, and articles from other papers—are "refining as with a refiner's fire" the matter which is to appear in the morning's paper.

The space in the *SUN* is too valuable to admit anything except the very cream and marrow of the news and information to its columns; wherefore, telegraphic dispatches are reduced to "Sparks," long communications to paragraphs, paragraphs to "Personals," and articles to "Jottings." Not long since a column and a-half re-



PUBLICATION OFFICE.

pany, and the editorial monarch of the establishment. His sway is imperial and despotic. No one does or can call him to account. He has had large experience in newspaper affairs, in subordinate as well as in controlling positions. He has been reporter, city editor, managing editor, New York correspondent, Washington correspondent, Paris correspondent, and Foreign correspondent generally. Like Napoleon, therefore, he knows his profession through all its grades, and can judge and do justice to all his subordinates, and pity all their woes because he has felt the same. He has a wide knowledge of public affairs, and



EDITORIAL ROOMS.

also of business, commercial, and scholastic matters; has travelled much both in Europe and America; speaks the modern languages with fluency; has an intimate acquaintance with many of the leading minds of both hemispheres; is familiar with literature, philosophy and metaphysics; sympathizes with the progressive and ameliorating movements of the times; has always been

part was sent to the *SUN*, of a meeting at the Astor House of the Congressional Committee on Ship Builders; but the substance and the exact truth of the whole matter came out in the *SUN* of October 16, in this wise:

The Congressional Committee on Ship Builders had another session yesterday, and did nothing.

The *SUN* Condensers are men who can see at a glance what is interesting in an article, and what is useful, and what is needful, and what is of no account; and they "kill" without mitigation or remorse.

And now midnight approaches; the turmoil has died away; the Chief and his immediate staff have disappeared; the reporters have gone, except a few who have but recently come in; and the Managing and Night Editors, with a few trusty assistants, are all that remain on duty. And now let us "follow copy" upstairs to the

COMPOSING ROOM.

where the type-setters ply their nimble fingers, of which room the cut thereof gives a faithful representation.

The composing room of the *SUN* Office is a fine, light, airy apartment, and is fitted up with the utmost elegance and convenience. The exact cost of the outfit, including type, furniture, and material for stereotyping—was \$12,290.72. The regular force of compositors, or type-setters, is forty-three; and a fine-looking, intelligent company of men they are. Some of them look so sober and grave that one could imagine them to be lineal descendants of the old monks who where the first members of the craft, did we not know that monks never marry. And this reference to the old monks reminds us of a flavor of the monasteries which yet lingers around a printing office, and betrays its origin, to wit: A general meeting of all the compositors in an office is called "*holding a Chapel*." Printers also speak of "*justifying a form*;" a "*form*" meaning the type of a page of a newspaper, or of several pages of a book, held together by a large iron band or rim called a "*chase*;" and "*justifying*" meaning to arrange the type in a just, straight, square, regular, or proper manner. But printers differ from other theologians (except those of the New Church) in this, that they never "*justify*" by faith alone, but always by works.

The compositors have been at work for many hours. They take it easily at first, from 3 o'clock P. M. to 5; then there is a recess of two hours, and at 7 o'clock they come back for the real work of the day, and stay till 2 o'clock A. M., or as much longer as may be necessary. As a usual thing, when 2 o'clock comes, all but eight of the compositors are allowed to go, and the eight retained are kept till the paper is sent to press. The compositors work by the piece, and their average earnings are \$25 a week; but some of them make \$35 a week, when they do their best.

After the type-setters have been at work for an hour, or less, the proof-taker begins his work. The type which has been set is put in an orderly way and fastened in its place on long brass beds called galley, which are then run under the proof press, whereby impressions, or proofs are taken on long slips of paper. These are sent to the proof-readers, in the den shown in the opposite cut, who read them over for errors, and mark all mistakes on the margins of the proofs, which are then taken back to the compositors, who correct the errors in the type, after which new proofs, called revises, are taken to see if everything is right. If any errors are found in the revise they are also marked and corrected; and when everything has been at last set right in a galley of type, it is transferred to the make-up table, that is, to the table where the type is finally put in the forms or pages of the newspaper.

About eleven o'clock, the foreman of the composition room sends word to the Night Editor that he is ready "to make up;" that is, that he is ready to put the type into the pages, and send them to the stereotyper's. On receiving this notice, the Night Editor appears, with a separate set of proofs, taken expressly for him, and over which he has been studying and working for several hours.

There is already matter enough in type to fill the columns of the paper twice over, and more is coming all the time. The telegraphic lightnings are pouring in it; the reporters are writing it out by the column; and messengers are coming with all manner of communications—"very important, sir, and *must* appear in the morning's paper, sir."

And so the Night Editor works away, studying over his proofs, gradually singling out what must go in, whether or no, and no mistake; also what *may* be left out: also



COMPOSING ROOM.

what *shall* be left out. He also alters, condenses, and "*kills*" paragraphs and articles at his sovereign will and pleasure. As necessity rides him with sharper and sharper spur, he begins to wax savage, and no longer merely "*kills*" but *murders* bantling after bantling with grim satisfaction. Rhetoric becomes an offence unto him; circumlocution stirs his indignation; only "*thoughts that breathe and words that burn*" are admissible; and they must breathe like a hurricane and burn like a Drummond light at that—no gaseous admixtures being tolerated in the breath, nor smoke nor cinders in the fire.



PROOF ROOM.

When, therefore, he receives notice from the foreman of the composition room, that he "*is ready to make up*," the Night Editor goes up to the fifth story with a clearly defined purpose. Under his direction the foreman rapidly lifts column after column of the news and editorials into the form which is to constitute the second or editorial page of the next morning's *SUN*. The last page and the third page composed wholly, or nearly so, of advertisements have already been made up, and sent to the stereotypers. The first page, which is the last one made up, is yet to come. Meanwhile let us step into

THE STEREOTYPING ROOM,

and see what the Vulcans are about.

The stereotyping room is one of the most interesting

departments of the *SUN* establishment. The cost of fitting it up was \$1,921.75. It is occupied, and the stereotyping process performed, by five splendid fellows, whose brain and muscle, as well as their skill and fidelity, are of a high grade. As we saw them going through their work, we could not help thinking how little people who write books or newspaper articles, and fancy that writings or writers are of the first consequence, know how much they are indebted to inventors and mechanics. What would the best piece of writing ever done in Amer-

ica amount to, were it not for the type-founders, and type-setters, and stereotypers, and ink-makers, and paper-makers, and press-builders, and pressmen, and engineers, who give it form and substance, and send it abroad as on the wings of the wind?

The stereotyping process is peculiar, and differs widely from that in ordinary use. The Bullock presses used in printing the *SUN*, and which we shall describe hereafter, require stereotype plates which can be affixed to their cylinders, and hence the plates must be cast in half circles; and they must be cast, too, with the utmost expedition, and in unusual numbers. *No less than six complete sets of plates have to be cast for the SUN, so that it can have six papers printed consecutively, in order to get off its immense edition.* The process of stereotyping is performed in this wise:

The flat page of type is first warmed on a hollow iron table, heated by steam; then a sheet of thick paper, such as steel engravings are printed on, which is chemically prepared by soaking in a mixture until it becomes nearly of the consistency of paste, is laid upon the face of the type, and beaten down with a heavy and stiff brush, until every letter, rule, and point is perfectly moulded in the soft mass of paper. All hollow places are then filled up with a preparation of plaster of Paris; after which another sheet of the prepared paper is laid upon the first, and beaten down in the same manner. By this means a substantial mould of the entire page is formed. The type and mould are then swathed in blankets, placed on the hollow steam-heated table, run under a press on one end of the table, and subjected to a heavy pressure, while at the same time it is baked by the heat. It is then taken out, and the paper mould is removed from the type. It is firm, but pliable, and capable of resisting a high degree of heat. It is the flexibility of the mould, even more than the celerity with which it can be produced, which gives it its peculiar value; for it is its flexibility which enables a cylindrical plate to be cast from it.

After the mould has been perfected, as above described, it is placed in a reversed position in an iron matrix of the exact curvature of the press cylinder; the melted type-metal is then poured in; and in two minutes a stereotype plate of the page of type in the form of a half-circle, is taken out, and handed over to the trimmers to be fitted to the press cylinder; the matrix is again filled with metal, and another plate is cast; and so the process goes on, until six casts of each page have been taken, trimmed, and sent down to the press room.

We will now step on to the elevator, along with a set of the stereotype plates, and descend with them to

THE PRESS ROOM.

The Press Room is situated in the basement of the edifice, and is a most capacious apartment. An idea of its appearance, when everything is at high pressure, may be gained by studying the cut which we give elsewhere.

But when we arrive at the press room, at half past one o'clock in the morning, matters are in no such lively trim. Everything is quiet. There is not yet even a hiss of steam. Stalwart men are stretched out on the huge piles of paper, fast asleep. Some of them lie face downward, with their arms stretched out at full length, and sleeping as though they would never again awake. Others are lying all in a heap, others flat on their backs, showing grimy but honest faces; and all are sleeping soundly; and we are glad to see them thus resting, for they have a hard pull coming fast upon them. Other men are bringing in the huge rolls of paper from the

dampening room, and arranging them conveniently at hand, for the pressmen. We pass into the

DAMPENING ROOM,

where the paper is wet down by machinery, in a novel and beautiful manner. The cut of the Dampening Room will give the reader some notion as to how this process is performed.

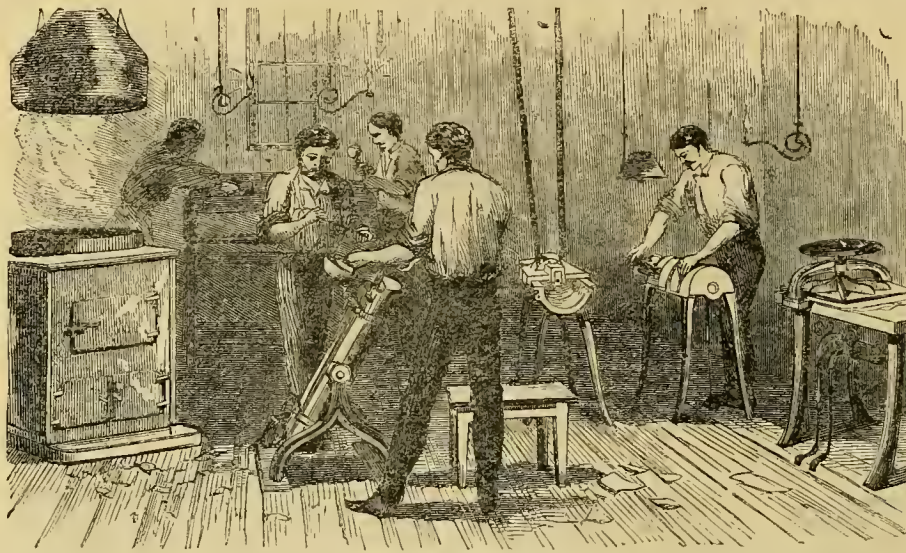
The Bullock press, on which the *SUN* is printed, prints from a continuous sheet, which is wound up in the form of a huge cylinder, as shown in the cut of the press room, and also in the cut of the dampening process. The machine for wetting down or dampening the paper is so constructed that it unwinds it from one roll and at the same time winds it up into another roll; and as the paper thus passes from one roll to another it is subjected to a uniform shower of the finest spray, which dampens it in every fibre to just exactly the degree which is requisite for it to print to the best advantage—the construction of the press, the rapidity of the motion, and the force of the pressure all considered.

And now, as the pressmen have begun to wake up, and are beginning to put the stereotype plates on the cylinders, and the steam begins to give token of its coming, we will briefly state, that that marvel of beauty, capacity, economy and power which is known as the Bullock Press must be seen in operation to be comprehended and appreciated. After one has seen any other press of equal printing capacity in operation, and counted the many persons required to attend upon it, and measured the space it occupies, and heard its thunderings and crashings, let him go down into the *SUN* press room and see the Bullock Press quietly doing its work, with seemingly no one to attend upon it, and he will be ready to appreciate the affectionate commendation of the foreman, when he exclaims, as he lays his hand upon the Press, "It's just as snug and tidy as a woman, and a deal easier to manage."

And now let us go up to the composition room again, where over the first page of the *SUN* the last final struggle of matter against space is to begin. It is now 2 o'clock A. M. The form must be in the stereotyper's room in fifteen minutes. There is matter enough on the make-up table to fill four pages, and every line of it is important. What's to be done? especially as a fresh batch of copy has just come up, marked "MUST," from the Managing Editor, who is still at work below. Now is seen the value of understanding every part of one's business, especially the mechanical part. The Night Editor is a practical printer, copy-cutter, proof-reader, anything and everything that may be needed. He looks over the type—does not have to resort to the proofs—and orders out this and cuts down that, and reads the proof of new articles from the type; and finally, when a crisis comes, the Managing Editor who is also a practical printer, and knows every in and out of the business, goes to the case and helps set up a telegram, which he condenses as he sets it, and hands it over ready to the Night Editor's hand; "Good night" comes in from the telegraph offices; and the page is completed, and the form is locked up (that is, fastened so the type can not fall out) and trundled into the stereotypers' room, exactly at 15 minutes past 2 o'clock A. M.

"We gain that last 15 minutes" said the Night Editor

to us, as we were following the form to the stereotypers', "by having our third Bullock Press. When we had only two of 'em, we had to go to press 15 minutes earlier; and that last 15 minutes is a big thing—a very big thing. The cream of the news often comes then—as you saw to night. On election night, I kept the form back till half past two; and if the President of the United States should be assassinated I'd keep it till three, just as sure as you live!" This declaration was made with indescribable



STEREOTYPE ROOM.

emphasis and solemnity, as though no stretch of authority or audacity could any further go.

But look at the stereotypers. They are also on the home stretch, and how magnificently they work. Every man knows just exactly what to do, and does it to perfection just in the nick of time; and the total result is that the six casts of the first page of the *SUN* are on their way to the lower regions in just thirty minutes from the time the stereotypers received the form. That is only five minutes to a cast.

From the stereotype room we now go down to the publication office, to see the newsmen and newsboys buy

hole in the delivery counter, into a box kept for the purpose. The smallest check calls for three papers, and the largest for eight thousand.

On entering the publication office, we find a number of men and boys buying their checks, and several tired little fellows lying asleep on the floor; and on the gratings outside, through which the warm steam and hot air come up, are other children also lying asleep. It is a raw and chilly morning, and the "iron bedstead," as the little fellows call the grating, affords them a luxurious couch, through which he warmth comes upon their pinched and withered and ill-clad bodies like airs from Heaven.

Poor boys! We have been observing and studying them these twenty years. We remember their "O-de-Ram Society," formed in 1853, to which all good newsboys were allowed to belong, who wanted to go to Heaven, and be angels after the pattern of little Cordelia Howard, who was then playing "Little Eva," in *Uncle Tom's Cabin*, which at that time was having its famous run at the old Chatham Theatre. It took us some time to hunt down the origin of their title, and to find out what it meant. The boys themselves could only say that it was "O-de-Ram, and that's all about it." But at last we got at the secret. Old Uncle Tom used to sing a hymn to the dying Eva, beginning, "O, de Lamb, de bressed Lamb," and ending with a chorus, in which the same words were several times repeated. Uncle Tom used to sing the hymn with a strong plantation roll and accent, and the newsboys understood him to say "O-de-Ram," etc. The tender-hearted little fellows used to cry, as all the rest of us did, over Eva's dying advice and farewell to Uncle Tom; and they also resolved, with Uncle Tom, to meet the dear child in Heaven. To them, that vision of innocence and beauty was the absolute incarnation of angelhood; and the scene amid

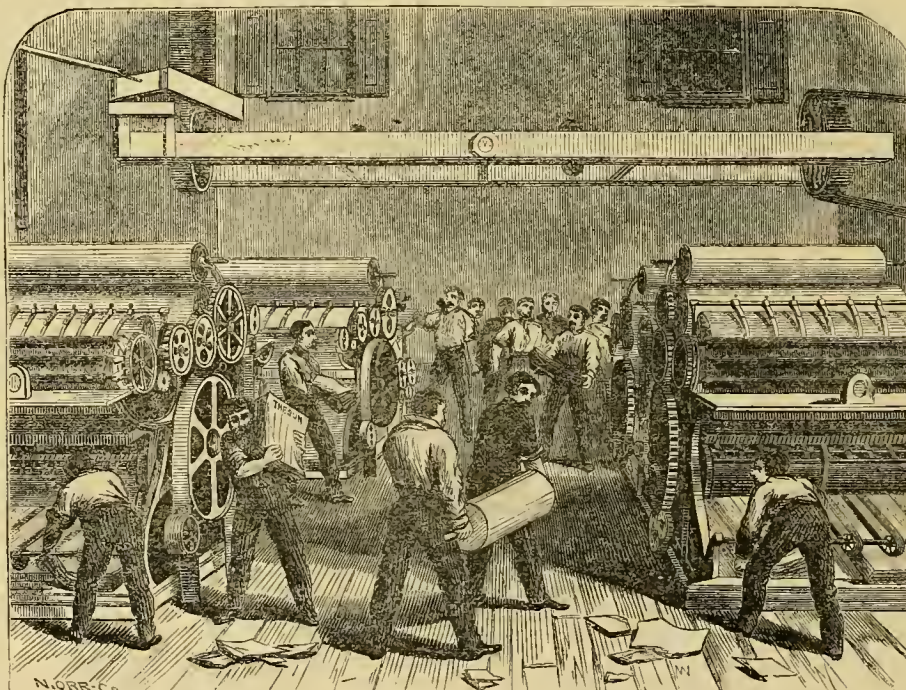
which she nightly took her mimic departure for the Land of the Blessed, was to them an actual forerunner of eternal life.

And so the little waifs formed their O-de-Ram Society, and tried to be good enough to become companions of Eva in the Better Land, and dreamed of her on their "iron bedsteads;" and every one of them probably hoped that he would somehow have her for his own especial angel. The newsboys of that day, sixteen years ago, have passed from the scene, and become men; many have died, and some fell fighting for their country, and these now know the secrets of the eternal world. Let us hope that every one has found his Angel here or there.

And now back to the press room again. The plates are all on. At 7 minutes to three the first press starts and delivers 200 papers a minute. In two minutes the counters begin to count off, and the waiting newsboys and newsmen begin to receive their papers. At 2 minutes

after three the second press begins to throw off its 200 *SUNS* a minute. At 9 minutes after three the third press starts; and now here they come, 600 *SUNS* a minute, both sides printed simultaneously; and if necessary, the number can be forced up to 800. And now ensues a scene which it is impossible to describe, but which our artist has drawn with fidelity, as seen below.

The counting of the papers is one of the most interesting and astounding performances in the whole business. There is one man who counts 200 a minute, and another who can count 400 a minute. Let the readers of this



PRESS ROOM.

their checks. When the delivery of the paper begins, which will be in a few minutes, the rush will be so great that there will be no time to make change; and so newsmen and newsboys provide themselves with metal checks, about the size of a two-cent piece, on which is stamped the number of papers for which they have paid. If a newsboy wants 12 papers, he pays 16 cents—the *SUN* is sold to him at 1 1/3 cents a copy—and receives a check which entitles him to 12 papers. This check he presents to the man below of whom he gets his papers, who delivers his 12 *SUNS* to him, and drops the check, through a

article try to count 400 a minute on their several fingers, touching every finger at every count; or try to count 400 pins or 400 peas in a minute; and they will get some notion what it is to count that number in that time.

The fact is, the counting of newspapers in the SUN office has been refined into an art as delicate as that of piano playing, and it is performed very much in the same way. The counter throws a pile of damp papers on the table, strikes the heap in the stomach with his left hand, twitches up the edges with his right, so that they stand slightly apart, and then with the fingers of his left hand runs them off in groups of five, almost exactly as a pianist runs off arpeggios on his instrument, and with an equal precision and delicacy of touch.

The papers are usually counted off in bundles of fifty, but sometimes in larger quantities. The number taken by the different buyers the morning we were present varied from 6 to 8,800. The six were taken by a little boy about seven years old, the 8,800 by a Brooklyn news-dealer; and we are informed that the whole number delivered by half-past 4 o'clock was sixty-nine thousand.

This scene which comes off every week-day morning in the basement of the SUN Building, is one of impressive interest. What a variety of people—the extremely old, and the extremely young; the robust, the decrepit and the blind, women as well as men—make their living by selling the morning papers. We say the blind, and blind men there are, who come regularly for their papers at the early hour mentioned. Darkness is nothing to them. In fact, it is an advantage. The streets are deserted, and there are neither men to jostle them nor vehicles to run over them. But it seems a sad thing for a poor blind man thus to have to toil for his bread. And the women and children, too! God pity them. But after all, let us be thankful that there is even this way for them to earn wherewith to keep starvation at bay.

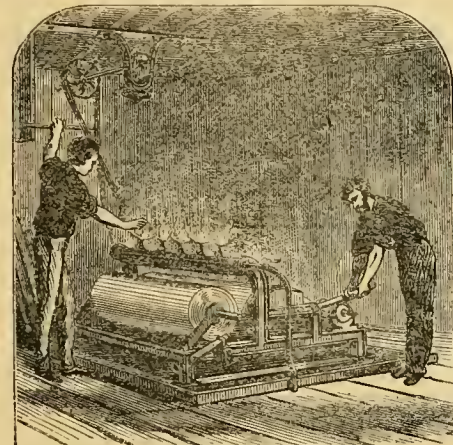
One of the blind newsmen deserves special mention. His name is John Beith; is a Scotchman; boiler maker by trade; lost an eye while working on an iron steamer in Glasgow; came to America in 1849; lost his other eye in 1857 while working on the U. S. Revenue Cutter *Harriet Lane*; went into the news business six years ago; obtains all the morning papers personally at the different offices, and goes about town on business all alone. He usually starts for the SUN office about 2 1/2 o'clock A.M., from his residence up town. He carries a long cane in each hand, and on getting into the Fourth avenue, he places the end of a cane in each groove of the down-town track, and starts briskly on his journey. One morning last winter, when the snow had fallen heavily and lay thick on the track, one of the switches at Grand street had become misplaced, and the sturdy Caledonian was switched from his route, and finally brought up away over on the east side of the town, a long way from his destination; and being thrown completely from his bearings, he had a deal of trouble to find his way to the SUN office. This honest old Scotchman asks no favors of anybody, but, blind as he is, he paddles his own canoe with the pluck and fortitude which are characteristic of his race.

Having thus followed the New York SUN through its entire daily and nightly growth, from the first article written to the point where the presses are dropping six hundred complete copies a minute at our feet, we now take our leave, and go down to the lower end of the City Hall Park to see the excavation for the foundation of the new Post Office carried on by Drummmond lights, and then take a Third avenue car for up town. By the time the car arrives opposite the SUN office, it is comfortably filled, and a newsboy comes in crying "Here's your New York Sun," and sells five papers on the spot. We look at the City Hall clock; it is just 35 minutes past 3 o'clock. Thus early does the sale of the SUN in the streets commence, and such is one of the results of having three Ballock Presses which, from the word go, can easily deliver 600 complete papers a minute.

The amount of the weekly salaries and wages paid to the immediate employees of the New York SUN is \$2,742.44. If we divide this by six, the quotient is \$457.24 which is the daily cost of the literary, business and mechanical force of the paper. The average daily cost of the regular telegraphic news is \$32.45, without counting the extras, which now and then amount to several hundred dollars in one day. The daily cost of gas, fuel and materials actually consumed, not including ink or paper, is \$28.23. In addition to this are taxes, interest on the capital, and wear and tear, which daily amount to \$108.36. This makes a total daily expense, exclusive of

the cost of ink and paper, of \$687.29; which is the exact sum it costs to get ready to give the first buyer of the paper his copy of the SUN for two cents.

It is plain, therefore, that if there were but one buyer of the SUN, nothing could be made on the sale of it; nor in that case, is it probable that advertisements would pour into its columns at thirty cents a line. But inas-



WETTING DOWN PAPER.

much as the first buyer is reinforced by seventy thousand fellow-buyers of the SUN, money is made on the sale of it, and advertisers do rush to its columns. The amount received for one day's advertisements, (October 21st.) was \$1200.50. The amount received for sales of papers (72,300 copies) on that day was \$903.75. The cost of ink and paper, used on that day, was \$649.36. Now let us see on which side the balance stands.

Cost of getting ready to print.....	\$687.29
Cost of ink and paper.....	649.36
Total cost.....	\$1,336.64
Amount received for advertisements.....	\$1,200.50
Do. " " sale of papers.....	903.75
Total receipts.....	\$2,104.25
Deduct total cost.....	1,336.64
Total profits on day's business....	\$767.61

We have not given the largest day's business either in sales or advertisements. On the third day of November 87,800 copies of the SUN were sold, and the receipts for sales alone were \$1,097.50. Our object is to give simply a fair average, and so we take what we understand to be an average day's business.

In addition to their enormous daily issue, the SUN PRINTING COMPANY publish the SEMI-WEEKLY SUN, at \$2 a year, and the WEEKLY SUN at \$1 a year. The

One man writes that he raised a bushel and three pecks of potatoes from one potato of a choice variety which he received (among other things) as a premium on his subscription to the WEEKLY SUN. Limitation of space forbids further enlargement on this topic; but the reader can send to THE SUN office for a circular and specimens, which will give him full information on the subject.

Under its present management, the New York SUN is having greater success than ever before. It is emphatically the people's paper. It always stands by the working-men, the trades unions, and all movements for the improvement of the condition of the masses, when they need support; and it also stands by them in an effective manner. It does them downright, substantial service. For these, and many similar reasons, THE SUN has a strong personal hold on the affections of the masses.

And then the fact that it gives all the news of the Associated Press at one-half the price which the other papers of the Association charge for it, in addition to what its own exclusive enterprise furnishes, and the fact that it gives the combined results of the labor and brains of one hundred and forty-four men, winnowed of all chaff, skimmed of all scum, and purged of all sediment—the fact, in short, that it every morning gives every one of its buyers \$687.29 for two cents, places the ever-growing prosperity of the New York SUN beyond all question. Its compactness is also a strong point in its favor. One can attack its contents with a fair hope of being able to master them within a reasonable period.

In the antediluvian days, when human beings lived away up towards the thousands, such a feature would not have been of so much importance. In those long-drawn times a sprightly girl of sixty, or a robust youth of ninety, or even a middle-aged man or woman two or three hundred years old could take things moderately; but it is ordered otherwise in this day, and especially in this Metropolis. Here life is cut short at both ends, and crammed to choking in the middle: "the day's hurly burly's never done," and there's only time to read the SUN.

[Advertisement.]

Publisher's Announcement.

DAILY SUN, by mail, per month, 50 cents, per year, \$6.00
SEMI-WEEKLY SUN, per year, 3.00
WEEKLY SUN, per year, 1.50

To promote our country circulation we have covenanted with Mr. ANDREW S. FULLER, our agricultural editor, to grow for us a select list of plants, vines, and tubers, of approved value, a choice of which is offered to every full-paying subscriber to the WEEKLY or SEMI-WEEKLY editions, at \$1 or \$2 a year, whether singly or in clubs. These plants are carefully labeled and packed, and sent free in the spring to all such as desire them. Among these are

150 of the Choicest Varieties of Potatoes.
Some of them cost us last spring fifty dollars a tuber. For 25 subscribers, with \$25, we will send 25 copies of WEEKLY for one year, and 25 named varieties of potatoes, including the newest and most costly kinds. For fifty dollars, 50 copies and 50 varieties. For one hundred dollars, 100 copies, and 100 varieties.

For the ladies we have grown

30,000 Choice Lilies and Gladioluses.

In ordering the gifts it will be only necessary to mention the number.

1. Two Ellisdale Raspberry.
2. Two Clarke do.
3. Two Philadelphia do.
4. Two Brinckle's Orange do.
5. Two Davison's Thornless Black do.
6. Two Seneca Black do.
7. Two Mammoth Cluster do.
8. Two Monthly Black do.
9. Two Summit Yellow do.
10. One Sable Queen Black-berry.
11. Two Early Wilson do.
12. Two Kittatiny do.
13. Two Cherry Currants.
14. Two White Grape do.
15. Two Concord Grape-Vines.
16. Two Hartford Prolific do.
17. One Delaware do.
18. One Iona do.
19. One Japan Lily, Long-flowered (White).
20. One Japan Lily, Rubrum (Red).
21. One Japan Lily, Roseum (Rose-colored).
22. One Japan Lily, Album (White).
23. One Lilium Candidum (Fragrant White)
24. One Choice named variety of Gladiolus.
25. One package of Lilium Auratum seed, the new gold-banded lily from Japan.
26. Bresee's Prolific.—Best late potato.
27. Climax. Large, early, excellent potato.
28. Early Prince.—A new variety of great value.
29. Early Mohawk.—Large, productive, early potato.
30. Early Rose.—Unsurpassed.
31. King of the Earlys.—Tubers sold at \$50 last spring. Large, white, early as the Rose.



NEWSPAPER DELIVERY ROOM.

WEEKLY SUN is intended more particularly for country circulation, and is filled only with the choicest news of most interest and value to those who do not care to take the New York daily papers. Great care is bestowed on its agricultural and market reports; the farmer and the country merchant are provided with such items of intelligence as most closely enter into the warp and woof of their prosperity; and the matrons and children are not forgotten, but are supplied with such genial and instructive reading matter as one loves to peruse in the family circle and enjoy with those who sit around the same hearthstone. Costly premiums are given to subscribers and clubs to the WEEKLY SUN, embracing a vast variety of subjects, from the choicest agricultural products to first-class pianos. The publishers of the WEEKLY SUN are in this way doing more for the agriculture of the country than is accomplished by the Agricultural Bureau at Washington. They have sent out tens of thousands of premiums, embracing the choicest new varieties of agricultural products; and the results have been not only highly advantageous to those to whom premiums have been sent, but also to the general interests of the country.

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For details, see *American Agriculturist* for November, or send for specimens, posters and prospectuses, to

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Popular Music at Popular Prices	" "
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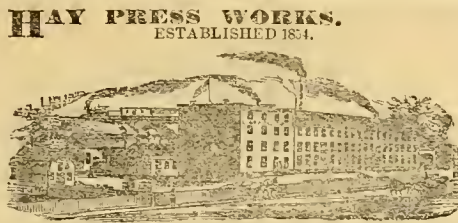
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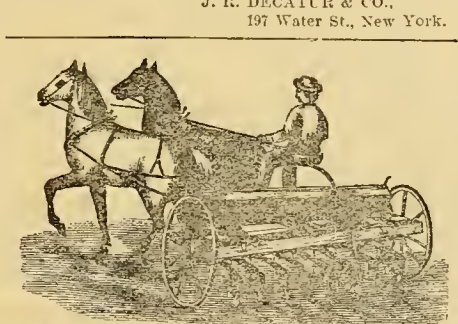
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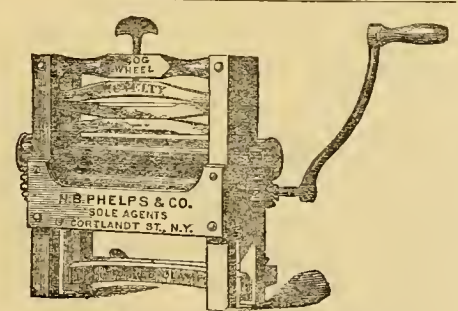
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RIGHT HAND CORN-SHELLERS, a great improvement; one man with one of these, will do the work of two, with any of the old styles.

Horse-Powers and Threshers, Wood-Sawing Machines, Fan-Mills, &c., &c. ICE TOOLS in great variety. Send for illustrated circular and price list.
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Foster's Plaster, Grain and Grass Seed Sower, with or without Harrow attachment. Greatly improved for 1870. Send for full descriptive circular to
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Buy the "NOVELTY" Wringer, or at least take it on trial with any or all others, and keep the BEST.
FOR SALE EVERYWHERE.
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The Reliance Wringer,
 With New Spiral Cog Wheels,
 which cannot get out of Gear, and patent Keyed Rolls, the covering of which will not twist upon the shaft. Is less complicated and better made than any other Wringer, and is the most economical. Manufactured by
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 Prevents balling and slipping, or the picking up of stones. Needed for every horse. Made of the best of rubber; easily adjusted or removed; does not cover the frog; cannot injure the hoof, as no nails are used; will fit any foot without removing the shoe, and with ordinary care, will last several seasons. For sale at all first-class Saddlery and Hardware Stores. Trade supplied on liberal terms.
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Folding Exhibition Coop,
 FOR POULTRY SHOWS, ETC.
 1st. Premium, Conn. S. Poultry Socy.
 Price \$5.
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 FOR RETAINING BED-CLOTHES OVER CHILDREN.—Allows perfect freedom of movement. Effectually secures the bed-clothes. Applied in a moment, and requires no further trouble. Entirely obviates the colds which are so frequently caused by children kicking the cover off while asleep. Endorsed by Mrs. Stow's Health and Home, and every one who has used them. Sent by mail, post-paid, for \$1. State age of child. THOMPSON BROS., 59 Park Row, New York.

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 The best and cheapest. Our improved Evaporator is licensed by the proprietors of Cook's, Cory's, and Harris' patents, combined with our own improvements patented June 18th, 1869. The best Evaporator for Sugar Cane, Sorghum, and Maple Sugar. Send for Cane Circulars to Hartford, Ct., for Maple Circulars, to Bellows Falls, Vt. Address
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 State that you saw this in the *Agriculturist*.

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Prindle's Agricultural Steamer
 Is perfectly safe, is cheap, does not require skilled labor to manage, and saves from 25 to 50 per cent to the Stock-feeder. Those in want will send for prices and circulars to
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Work for the Winter.
 LIVE, WIDE-AWAKE AGENTS and CANVASSERS wanted. Pleasant business and large pay for little work.
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SLOW HORSES Made Fast; and Fast Horses Made Faster. The numbers of Haney's Journal containing these articles complete, only 15c. **ROBERT BONNER** (probably the best authority on this subject) says in his N. Y. Ledger, Oct. 16, they are very interesting and instructive, and alone worth the price of the publication. **HUNTING and TRAPPING** and how to Dress and Tan Skins and Furs, &c. The Journals with these complete, only 10 cts. Exposures of Humbugs in every No.
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ARION PIANO FORTE.
 NEW WAREROOMS:
 215 East 26th Street, New York.
 Send for Price List.

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ESTABLISHED 1861.

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Receive their Teas by the Cargo from the best Tea districts of China and Japan, and sell them in quantities to suit customers AT CARGO PRICES.

The Company have selected the following kinds from their stock, which they recommend to meet the wants of clubs. They are sold in cargo prices as the Company sell them in New York, as the list of prices will show.

PRICE LIST OF TEAS.

- OOLONG (Black), 70c, 80c, 90c, best \$1.10 lb.
MIXED (Green and Black), 70c, 80c, 90c, best \$1 per lb.
ENGLISH BREAKFAST (Black), 90c, 90c, \$1, \$1.10, best \$1.20 per pound.
IMPERIAL (Green), 80c, 90c, \$1, \$1.10, best \$1.25 per pound.
YOUNG HYSON (Green), 80c, 90c, \$1, \$1.10, best \$1.25 per pound.
UNCOLORED JAPAN, 90c, \$1, \$1.10, best \$1.25 per pound.
GUNPOWDER, (Green), \$1.25, best \$1.50 per pound.

COFFEES ROASTED AND GROUND DAILY.

GROUND COFFEE, 20c, 25c, 30c, 35c, best 40c per pound. Hotels, Saloons, Boarding-house keepers, and Families who use large quantities of Coffee, can economize in that article by using our FRENCH BREAKFAST AND DINNER COFFEE, which we sell at the low price of 30c. per pound, and warrant to give perfect satisfaction. ROASTED (Unground), 30c., 35c., best 40c. per lb. GREEN (Unroasted), 25c., 30c., 35c., best 35c. per lb.

CLUB ORDER.

Braidwood, Will Co., Ill., Feb. 14th, 1869.

TO THE GREAT AMERICAN TEA COMPANY, 31 and 33 Vesey Street, New York.

Gentlemen:—Business, and a want of opportunity, have for the last eight months prevented me sending, or rather attending to our monthly club, whose orders I sent you regularly for about a year previous. Since that time many indeed have been the solicitations by many of the members, that I should once again commence and send club orders—for, as some declared, they had got no Tea, no matter what the price paid, since I quit sending the club orders. I have, therefore, at the urgent request of a few, resolved to send you a small order monthly, and as a beginning send you the following:

Table with 3 columns: Item, Name, Price. Includes English Breakfast, Uncolored Japan, Imperial, Young Hyson, Oolong, and various other tea types.

Address to John James, Braidwood, Will County, Illinois, per Merchants' Express to be collected on delivery, and oblige Yours respectfully, JOHN JAMES.

Parties sending club or other orders for less than \$30 had better send a Post-office draft or money with their orders, to save the expense of collections by Express, but larger orders will be forwarded by express, "to collect on delivery."

Hereafter we will send a complimentary package to the party getting up the club. Our profits are small, but we will be as liberal as we can afford. We send no complimentary packages for clubs of less than \$30.

Parties getting their Teas of us may confidently rely upon getting them pure and fresh, as they come direct from the Custom House stores to our warehouses.

We warrant all the goods we sell to give entire satisfaction. If they are not satisfactory, they can be returned at our expense within thirty days, and have the money refunded.

N. B.—Inhabitants of villages and towns where a large number reside, by clubbing together, can reduce the cost of their Teas and Coffees about one-third, (besides the Express charges) by sending directly to "The Great American Tea Company."

BEWARE of all concerns that advertise themselves as branches of our Establishment, or copy our name either wholly or in part, as they are bogus or imitations. We do not, in any case, authorize the use of our name.

POST-OFFICE orders and Drafts, make payable to the order of "The Great American Tea Company." Direct letters and orders (as below, no more, no less).

Great American Tea Company, Nos. 31 and 33 VESEY-ST., Post-Office Box, 5,643, New York City.

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THE CHAMPION CLUB FREE FOR 1871!

Aside from these liberal offers, our new Premium List embraces Planos, Organs, Gold and Silver Watches, Mowing and Reaping Machine, Fire Extinguishers, Hand Looms, Sewing and Knitting Machines, Clothes Wringers, Sickle Grinders, Rifles and Shot Guns, Silver Plated Ware, Dictionaries, Gold Pens, &c., &c. We give New Subscribers

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AND ALSO OUR ANNUAL FOR 1870 AS A PRESENT!

We give all Club Agents and all old subscribers renewing and sending a new name and \$4.00, a copy of an elegant Stone Engraving, 18x22 inches, entitled

THE FARMER PAYS FOR ALL?

Send at once for our New Premium List, Posters, Specimen Copies, and other canvassing documents.

Address THE PRAIRIE FARMER COMPANY, Chicago.

Say where you saw this Advertisement.

The Eumelan Grape.

The EUMELAN has been awarded the following first premiums for quality during the present fall:

- Penn. Horticultural Society (Philadelphia).....Sept. 13 to 16.
Ohio State Fair (Toledo).....Sept. 13 to 16.
New York State Fair (Elmira).....Sept. 13 to 16.
Geneva Horticultural Society (Geneva, N. Y.)Sept. 25 to 26.
Hammondport Grape Exhibition.....Sept. 29 to 30.
N. Y. State Grape Growers' Exhibition (Canandaigua).....Oct. 5 to 6.
Ohio Grape Growers' Association (Cleveland).....Oct. 13 to 14.
Lake Shore Grape Growers' Association (Erie, Pa.).....Oct. 15 to 16.

These are the strongest commendations of its quality.

The American Agriculturist has endorsed it so fully as to offer the vines as special premiums.

This Grape is also fully endorsed by the New York Tribune and by the Farmers' Club.

See advertisement, page 429, Nov. Am. Agriculturist. Profitable employment can be found introducing these vines.

Send for price list and terms to Agents. Address HIASBROUCK & BUSHNELL, "Iona," near Peekskill, Westchester Co., N. Y.

MISSOURI LANDS FOR SALE.

Missouri Lands are very fertile, and situated in the heart of the Union, they furnish an extraordinary opportunity to acquire cheap, healthy, and productive farms.

NORTH MISSOURI contains about 25,000 square miles, or SIXTEEN MILLION ACRES, as desirable as any in the valley of the Mississippi. Through this garden of Missouri the Hannibal & St. Joseph Railroad extends, and all its lands lie near its track, and numerous depots. The climate, so temperate and healthy, and a virgin soil, so capable of producing almost every kind of vegetation, invite emigrants from the cold and bleak North to settle on our rich prairies.

CIRCULARS giving full and valuable particulars are supplied gratis to all wishing to go themselves or to circulate to induce their friends to go also.

A SECTIONAL MAP showing exact location of all our Railroad lands is sold at thirty cents. Address Land Commissioner Hannibal & St. Joseph R. R. Co., Hannibal, Missouri.

NATIONAL EXHIBITION AT CORDOVA, ARGENTINE REPUBLIC.

All parties desiring information in regard to this Exhibition will please apply to either of the following:

His Excellency Manuel R. Garcia, Argentine Minister, Washington; Edward F. Davison, Argentine Consul General New York; Belisario Roldan, Special Agent of the Central Committee, at the Consul General's office, New York, or to the Argentine Consuls at Savannah, Baltimore, Philadelphia, Boston or Portland.

THE FALLING LEAVES

Betoken approaching winter, when nothing makes A FAIRER SO CHEERFUL. Or a Kitchen so neat, as a well polished Store, and Dixon's Carburet of Iron Stove Polish will do it in FIVE MINUTES, without dust or smell. Established 42 years. Try it. Made only by THE JOSEPH DIXON CRYSTAL CO., Jersey City, N. J.

Andre Leroy's Nurseries,

at Angers, France, the most extensive in Europe. For Catalogues apply to BRUGUIERE & THEBAND, 51 Cedar St., New York. P. O. Box 15.

A. D. PUTNAM & CO., Produce Commission Merchants, No. 68 Pearl-st., New York. Quick sales and prompt returns. Send for our weekly Price Current and Marking Plate.



B. K. BLISS & SON,

Nos. 41 Park Row, and 151 Nassau Street, New York.

Importers, Growers, and Dealers in Garden, Field, and Flower Seeds, Horticultural Implements, and Garden Requisites.

Would inform their friends and the public that the Sixteenth Annual Edition of their Illustrated Seed Catalogue and Guide to the Flower and Kitchen Garden, now in press, will be ready for distribution early in January.

No pains or expense have been spared in preparing this edition, to make it the most complete work of the kind ever published in this country.

It will contain nearly two hundred choice engravings of favorite Flowers and Vegetables—a large portion of which are entirely new; also, a beautiful colored lithograph, and a descriptive list of upwards of two thousand species and varieties of Flower and Vegetable Seeds, including all the novelties of the past season, with directions for their culture; also, a list of upwards of One Hundred varieties of Choice Gladiolus—with many other Summer-Flowering Bulbs—and much useful information upon the subject of gardening generally.

A copy will be mailed to all applicants enclosing Twenty-five cents. Customers supplied without charge.

Bliss's Gardener's Almanac for 1870,

Also in press, and will be issued the first of January. It will contain about 70 pages of closely printed matter, embracing a Monthly Calendar of Operations, and a price list of the leading varieties of Garden, Field, and Flower Seeds, with brief directions for their culture. A copy will be mailed to all applicants enclosing a three-cent stamp.

Address B. K. BLISS & SON, P. O. Box 5712, New York.

MAPLE SHADE FLOCK. THOROUGH-BRED COTSWOLDS.

Having purchased of John D. Wing, Esq., his

Entire Flock of Imported Sheep

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For Farm, Mining, or

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These machines require no brick-work; mounted on legs, they are especially adapted for use in Mills, Shops, Foundries, or Printing Rooms; or mounted on wheels, they are adapted for out-door work, Threshing, Wood Sawing, &c.

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LEGE, Amherst, Mass. For Circulars or any desired information, address the President, W. S. CLARR.

THE CHRISTIAN

60c. H. L. HASTING, Boston. See advertisement on cover page.

