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THE ONTARIO FARMER,

A MONTHLY JOURNAL OF

Agriculture, Horticulture, Country Life, Emigration, and the Mechanic Arts.

VOL. II.

HAMILTON, AUGUST, 1870.

No. 8.

AGRICULTURAL AND ARTS ASSOCIATION.

The Council of the above named Association met pursuant to adjournment on the 6th ult. In the absence of the Hon. D. Christie, J. C. Rykert, Esq., M. P. P., presided. An application from Mr. R. L. Denison, late Treasurer of the Association, for a release of certain lots covered by a mortgage to the Association, with a view of their being sold, was referred to the Solicitor of the Association for his advice. On his recommendation that the lots be permitted to be sold, provided not less than the appraised value be obtained for them, and the proceeds paid upon the mortgage, a resolution was passed authorizing the President to release the said lots. Mr. Becher, of London, put in a claim for \$171, in payment for legal services rendered in the prosecution of fraudulent gate keepers at the last Exhibition, which, after some discussion, was laid over till next meeting of the Council, the chairman expressing the hope that in the meantime, Mr. Becher would sue the Council for a debt which ought to be paid without demur or delay. At a subsequent stage of the proceedings, it was resolved:

"That the account of Mr. Becher, be referred to Messrs. White and Shepley, with instructions to call on Mr. Becher and effect an amicable settlement of the same, and with power to give an order on the Treasurer for whatever sum they deemed expedient."

Several minor matters of detail having been disposed of, the following letter from the Minister of Agriculture and Public Works was read:

LETTER FROM THE HON. J. CARLING.

Bureau of Agriculture and Arts, Toronto, 5th July, 1870.

HUGH C. THOMPSON, Esq., Toronto, Secretary of the Agricultural and Arts Association of Ontario.

SIR.—I have the honor to acknowledge the receipt of your letter of the 19th of May, enclosing a copy of the report of the Special Committee of the Council, to which was submitted my proposal of the 22nd of February last, for the more economical management of the affairs of the Association, and to express my regret that the Council has declined to accede to my proposal.

I have also to express my astonishment that a proposal so simple in its character, and so desirable in its objects, should have provoked so violent a speech from the President of the Association on the occasion of his submitting it to the Council.

It is charged against me that this is not the first time I have censured the Board. If by this the President desires to call the public attention to the exposures made of the gross mismanagement, which had characterized the conduct of its affairs up to the close of 1868, I am inclined to think the public will consider the "censure" to have been not undeserved. For years the Association had been practically a close corporation, expending large sums of money annually while ignoring the terms of the statute, requiring it to publish records of its transactions, including of course detailed statements of account. For many months the President (Mr. Christie) had been borrowing large sums of money for the use of the Association, and charging the interest, amounting to several hundred dollars, to the Association, when the books showed balances amounting to ten or twelve thousand dollars to its credit, which should have been in the hands of the Treasurer, and available for its ordinary expenditure. For years many exhibitors had been unable to obtain payment of their prizes, and a public distrust in the conduct of the affairs of the Association had been excited which demanded at the hands of the Government some action to remove it. The special occasion of the "censure" referred to, if the President prefers that term, was the neglect for ten months after the close of the year, to furnish returns of accounts as required by me in accordance with the statute, and the plea for that neglect was want of time. As a consequence of the action then taken by me, and of which the President now complains, the public has been, for the first time since 1863, put in possession of a statutory report of the Council, accompanied by the accounts in detail, showing all the prizes of the last Exhibition to have been paid within two months from the close of the financial year. With such results I have strong hopes of being able to survive the attack of the President on account of my former action or "censure" in relation to the affairs of the Agricultural Association.

In my present proposal I am quite unconscious of having censured the Board; nothing, certainly, was further from my intention. My object was one in which I had a right to expect that the members of the Board would feel an equally deep interest, viz., to reduce the expenses of the Association to the lowest sum consistent with its thorough efficiency. And I confess to some surprise that the proposal should have been rejected on grounds which were in no way raised by it. I suggested that the existing organization, by saving the rental of its present premises, and by availing itself of the rooms in the Parliament Buildings, and of the services of an officer and messenger of the Government Departments, could effect such a saving as

would enable it to offer larger prizes at its annual exhibitions. I am answered that it would be a serious mistake to abolish the existing organization; a proposition not even hinted at in my communication.

I concur in most of the statements of the report of the Committee. The progress of the agricultural interests of Ontario has been so marked as to be a fair subject for congratulation; and the steadily increasing success of the annual Exhibitions is an undoubted fact. All this, however, may be conceded without necessarily involving the admission that this success has been due to the particular premises in which the Council of the Agricultural Association hold its meetings. That, let me repeat here, is the main point raised by my letter. I am sure that neither the other members of the Government nor myself have the slightest desire to interfere in any way with the perfect independence of the Council, or to exercise any political influence over the Association. I have in no way attacked its autonomy; and if, in the future, that autonomy be attacked, and it will be only on account of the action of the Council itself, the surest way of perpetuating its existence and usefulness is by exhibiting it to the country as an economical and carefully managed body. And it is because I desire to see its autonomy preserved, that I regret the course which has now been taken by the Council.

The Agricultural and Arts Association is a Provincial, not a local institution; and it occurs to me that access to its officers would be much more convenient, if they were to be found in the same buildings with the general Departments of the Government. Those Departments are places of constant resort by the people at all times, and during the sessions of the Legislature the advantage to its members, all of whom take a deep interest in agricultural matters, would be manifest. Thus as a mere matter of public convenience, the centraling of all the Departments of the Government and Agricultural and Arts Association, with its Library and Museum, and its Executive officers, in the same building would be very advantageous. But when to these be added the fact that a very large saving could be effected in the expenses of an Association to which the Legislature grants ten thousand dollars of the public money annually, I find it difficult to appreciate the motives which have prompted the Council to reject my proposal.

Since I have had the honor of presiding over the Department of Agriculture and Arts, I have had but one motive in view,—that of promoting the success of the great agricultural and manufacturing interests of Ontario; and I think I may claim that—by the measures which I have thus far succeeded in getting passed by the Legislature, and by the departmental arrangements which I have inaugurated—those great industries have been more extensively promoted, and the more efficient and satisfactory working and management of all the Associations and Societies receiving Legislative aid have been secured. In my present proposal, I have been influenced by the same desire, and I feel confident that upon a full consideration of it the people of Ontario will recognize it to be a wise one.

I have the honor to be, Sir,
Your obedient servant,

JOHN CARLING,
Commissioner.

In Mr. Christie's absence, the Council seemed at

a loss what to do with the foregoing communication. Dr. Beaty considered that the latter cast very grave imputations upon the officers of the Association, and thought it should not be published until the President and Council had held a consultation over it. It was decided, after some discussion, not to make the letter public, nevertheless it appeared in the columns of the *Globe* next morning, whence we without much hesitation, take the liberty of transferring it to those of the ONTARIO FARMER, that the farmers of this Province may have an opportunity of ruminating over it as well as President Christie and his Napoleonic Council.

Mr. Weld endeavoured to illuminate the Council on the subject of drainage, also as to the importance of introducing the best quality of seeds, &c. The Council then proceeded to elect judges for the coming Exhibition. A number of gentlemen were chosen, but it was decided that their names be withheld from publicity at present. Dr. Beaty made a futile attempt to have motive power furnished for machinery at the next Exhibition. On the ground of its expensiveness it was resolved not to provide it. It was decided that four turnstiles constructed on the Norton principle should be ordered. They will register the number of persons passing through them, and thus obviate the possibility of a repetition of the frauds of last year. Special entrances will be provided for season and complimentary ticket-holders. The Executive Committee was empowered to employ gate-keepers to the number they deemed necessary for the Exhibition. The Hon. D. Christie and Mr. J. C. Rykert, M.P.P., were appointed delegates to attend the New York State Fair. Mr. Wilson and Dr. Beaty were appointed to act in a similar capacity at the Province of Quebec Agricultural Exhibition.

It was resolved that the Treasurer be authorized to arrange with the Manager of the Bank of British North America for the allowance of interest at the rate of 3 per cent. on the current account of the Association—a similar arrangement to be made with the Merchants' Bank, should the Bank of British North America decline the proposal.

Sundry small accounts were ordered to be paid, and the meeting adjourned *sine die*.

THE PRESS EXCURSION.

This year, for the first time since the pleasant custom has been established, we found ourselves able to join in the excursion of the Press Association. The annual meeting was held in Brantford, and a very cordial welcome was given the "press gang," by the citizens of that place. From Brantford, the party proceeded by special excursion train on the G. T. R. to Buffalo, making the journey very pleasantly and expeditiously. After spending

a few hours in that city, and receiving much courteous attention from the members of the press residing there, passage was taken on board the steamer "Atlantic," for Cleveland. The "Knights of the Quill" in the "Forest City" were, if possible, even more polite and hospitable than their Buffalo brethren, and rendered the visit a most agreeable one. From Cleveland to Detroit, another trip was had on board the "Atlantic," then taking the G. W. R. cars, a rapid run was made to London, where the final business of the Association was transacted, and a nice drive taken through the city, and among its surroundings. Of course we might spin out a long narrative, but we refrain, and will only dilate upon an incident in the excursion, which of all others, may be expected to interest the readers of an agricultural journal, viz: the visit paid by the party to the farm of the Hon. George Brown, on the afternoon of the day of the annual meeting in Brantford. This incident is told so briefly and so well by our fellow excursionist of the *Stratford Beacon*, that we prefer quoting his words to "getting up," an independent narrative of our own.

"Responding to an invitation from the Hon. George Brown, the party took carriages in the afternoon, and visited his magnificent farm of Bow Park. First in journalism in Canada, Mr. Brown is also first in agriculture. Situated five miles from Brantford, the farm skirting the Grand River, with its extraordinary curvatures at this point, constituting the celebrated 'Ox-bow bend,' and giving a river frontage to the estate of from eight to ten miles—there is all here that the heart of the most envious farmer could desire. Driving on in advance of the main party, we found Mr. Brown in— for him—a very equivocal position, especially considering that he so strongly condemns it in others. He was on the fence! He, however, explained that he was simply awaiting the arrival of his visitors at the boundary of his estate, and on seeing them approach, alighted on the right side, and became at once their host and guide. The farm of 900 acres of the richest land is stocked with from 300 to 400 head of cattle, nearly one-half being of the purest breeds—mostly Durhams—besides sheep and horses. Mr. Brown farms on scientific principles, and was quite prepared to show that good farming is highly remunerative. The principal barn is 230x48, with a root cellar the whole size; the sheep house is 300 feet long, and the calf house 150 feet; the cattle sheds are 394 feet; stables 220; and the granary 196 feet in length; and other buildings in proportion. Shortly before we arrived, the architect was there receiving instructions for another pile of buildings, and arrangements have been made for erecting a large steam engine for supplying the cattle with water, thrashing grain, sawing wood, steaming the roots, &c. The cattle are all stall fed, the saving of fodder by this means being immense. There are on the farm at present 23 hands. Mr. Brown calculates that he will cure this year from 800 to 1,000 tons of hay, every ounce of which, he said, would be fed to cattle, and sold in the shape of beef, butter and cheese. There is evident here a

feeling of absolute comfort, extending down to the very pigs. The young thorough-bred stock are particularly well cared for; so much so, that a story is told of a poor boy, on one of the neighboring farms, who visiting the sheds and witnessing the cleanliness and happiness everywhere prevailing, said it would be the height of his ambition, were he capable of this attainment, to become one of Mr. Brown's calves! Mr. Brown entertained his friends to wine, milk and other refreshments, and joined them again in the evening at the dinner given by the town of Brantford in the Music Hall, where, we confess, although he declared he had not uttered a word for three years before—in public, it is presumed he meant—he looked much more like his former self than when stalking, in a billycock, and with turned up pants among the cattle."

HAMILTON HORTICULTURAL SOCIETY.

The second exhibition of this Society took place July 1st, in the Drill Shed, Hamilton. The show in many respect was much behind what we have seen in former years; there being not nearly so large a display of cut flowers and floral gems from the greenhouses. We did not observe any novelties amongst the floral beauties. Of early vegetables there was a very fair, though not large, show, and the articles appeared to be well grown and well arranged. We noticed sixteen pecks of new potatoes, of which five were Early Rose. The best, however, seemed to be Kidneys, which were very fine, appearing more ripe and attractive than the Early Rose.

Of fruit, there was a most excellent exhibition in strawberries, cherries, currants and gooseberries. There were twenty-two plates of strawberries, mostly different varieties; of which the Dr. Nicase were extraordinarily large and fine, while Jucunda, Russell's Prolific and Triomphe de Grand showed off to great advantage. Of cherries there were sixty-seven plates, the Black Sultana and Napoleon Bigarreau being very fine and large. Some ten new seedlings, not yet named, were shown, of which two or three light sorts appeared to be first-rate excellence as regards size and appearance. It was too early for currants, gooseberries and raspberries to be ripe, although those shown did not lack for size; the gooseberries especially were very large.

SALE OF SHORT-HORNS.—We learn by private letter from Mr. J. R. Page, that Mr. Sheldon of Geneva, has sold his entire herd of Short-horns to Messrs. Wolcott and Campbell of New York Mills.

EMIGRANT LADS.—We have pleasure in calling attention to an advertisement which appears in our present issue, in reference to another detachment of emigrant lads, for whom the benevolent friends who have them in charge are anxious to obtain suitable places.

THE EARTH CLOSET.

Only after the lapse of near six thousand years are human beings coming to discover some of the prime virtues of their "Mother Earth." Only of late has man learnt that the material spoken of in the declaration, "*dust thou art,*" has the property of so absorbing and assimilating to itself all offensive organic matter with which it comes into contact, and especially human excrement, that its use is an effectual abatement of the foulest nuisance that ever intrudes within or hovers about our homes. The dry earth system of disposing of the urinary and fecal discharges from the human body, is one of the most beneficent appliances of modern science, and cannot too soon be universally adopted. There is no mystery about it. It is simply covering the evacuation with dry earth: "only that and nothing more." Any common dirt dried by exposure to sun and air, or indeed air-dried merely, as it may be in a heap under a shed, answers the purpose. Let enough of this, and it requires only about a pint, be thrown upon the urinary and fecal deposit, and it will at once absorb the moisture, remove the odour, and commence an assimilating process, which will by and bye transmute all into a soil richly charged with fertilizing matter. This is the whole philosophy of the Earth Closet.

Any common privy may therefore be converted into an earth closet with very little trouble. Clean it out. Cover the receptacle beneath the seat with three inches of dry earth. Place a box of the same dry earth beside the seat, and after each use let a pint or so of it be thrown into the receptacle and the thing is done. A vile nuisance is abated. A source of disease is done away with. A cause of annoyance is removed. A valuable manure worth \$10 per annum for each person is redeemed from waste and turned to useful account. Man acts like a reasonable thinking being, instead of acting like a stupid, senseless animal.

The only trouble involved is the preparation of the dirt, and this is really very slight. The dirt must be sifted and dried. That is all. Any common iron sieve, with quarter inch meshes, will do. The sifted earth will soon dry in the sun or in an open shed. The same dirt may be used several times before its absorbent and deodorizing power is exhausted, and to render it as valuable as possible for manurial purposes, it is desirable that it should be as fully charged as it will bear with fertilizing matter. But this renders a comparatively small stock of dry earth sufficient for the purpose.

For in-door purposes the dry earth system is invaluable. To the sick-room it is indeed a blessing. Even in-doors it may be applied with but little expense and trouble. Thousands of poor women

and invalids would derive the greatest relief from the introduction of some dry earth arrangement within their houses; but they cannot afford any large outlay to obtain the boon. Large outlay happily is not necessary. A writer on this subject says:

"Any board box of convenient size, not less than eighteen inches deep, may be fitted with a movable or hinged cover, with an ordinary finished hole. Unless the box is water-tight, its joints should be filled with putty, white-lead, tar, or pitch. Three inches of dry earth should be spread upon the bottom. At its side there should stand a box of sifted dry earth or anthracite coal-ashes, with a small tin scoop or cup. After each use of the closet, enough earth should be thrown into the box to simply cover the faeces. A pint of earth is ample for the purpose. When this box is filled, its contents may be removed with a shovel and a corn-basket, and it may be kept in the good woman's bedroom with as little offence as the stove or the chest of drawers.

To those however who can afford it, many obvious arguments recommend something more convenient, neat, and effectual than the mere dirt box, whether out of doors or in-doors. Both in England and the United States ingenious machinery, and handy appliances, have been got up and are fast coming into general favor and use. A company called the "Earth Closet Company," has been organized in Hartford, Connecticut, for the manufacture and sale of the fixtures necessary for the most ready application of the system now under consideration. They have already a network of agencies all over the United States. During a recent visit to Chicago we had an opportunity of inspecting the various articles on exhibition in the sale-room of the agency in that city, and we were much pleased with the simplicity and effectiveness of the contrivances which have been patented by the Company. We present on the following pages some engravings that will illustrate the methods and appliances of the Earth Closet system, as practised and supplied by the American Company just named. The first engraving represents the Commode, for use in the sick-room, or indeed, ordinarily, if desired, in doors.

Better than any thing we could say in regard to it, is the following description of the Commode and testimony to its use, from the pen of Col. Geo. E. Waring, a well-known American writer and author of several valuable agricultural works. We quote from a pamphlet, entitled "Earth Closets and Earth Sewage," published by "The Tribune Association," New York:

"The form of the Earth Closet which first commends itself to enquirers is the portable Commode, shown in Fig. 15. This is a chair, containing, in its thickened back, the vibrating hopper for holding the dry earth, and, under the seat, a hod of galvanized iron (resembling an ordinary coal-hod) for

receiving the deposits. The apparatus for throwing the earth is precisely the same in all respects as that used in the large closet. I have had one of these commodes in constant use in my house for a year and a half. It usually stands in a room which connects two others that are constantly occupied. It has been used, during the whole period, three times a day on an average. The fact of its standing where it does has never prevented us from keeping the doors open into the other rooms whenever desirable. The room in which it is used for other purposes, precisely as it would have been were the commode not there; and, in case of sickness, it is removed into the bedroom of the invalid, its contents being carried out only when the hod is filled. Under all circumstances, it is as inoffensive and innocuous as any other piece of furniture. Keeping it in constant use, I have found it desirable to have two hods—using them alternately.—With this simple precaution, and the most ordinary care to prevent the hod from becoming too full, I have found it to answer its purpose more perfectly than any water-closet I have ever seen.

If I desired to give the strongest possible proof of the entire success of the Earth System, I could not better do so than by showing this Commode in constant daily use in a close room, communicating only with two heated bedrooms, and causing no more annoyance to any member of the family than if it were a box of dry ashes. The amount of attention required is trifling. About once in four or five days the servant carries a hod of dry earth from a box in the woodshed, and pours it into the hopper, taking the full hod out from under the seat and putting the empty one in its place. The full hod is then carried out, its contents are emptied into the manure bin, and it is hung out in the open air, to be freshened by sun or rain until another supply of earth is required for the Commode. The labor is less than that of supplying water to the wash-stand ewers, and the annoyance is no greater than that of carrying out a hod of ashes."

We next present to our readers an engraving which represents the machinery of the Commode, hidden from view of course, by the outer case which appears in the preceding illustration. The mechanical parts are substantially the same in all the

closets, and simply provide for storing the dry earth ready for use, and distributing it as required.

There is, it will be perceived, a handle very similar to what is used in a water-closet. Pulling this with quick action, a lever is operated which opens a hopper, and jerks out about a pint of dirt, scattering it over the deposit. Just enough wood-work is connected with the mechanism shown in the annexed engraving, to form a frame, around which any carpenter or cabinet-maker can build a Closet or Commode in any style taste or circumstances may dictate.

Our next engraving represents a form of closet,

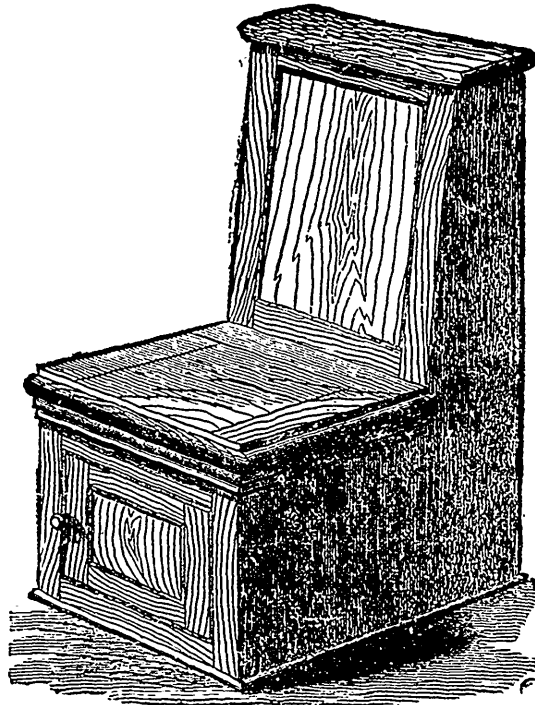
which in the generality of families may be made to take the place of the ordinary privy.

The reservoir and hopper, as represented in the annexed engraving, will hold about three barrels of earth, and one filling will last a family of eight or ten persons about three months. Col. Waring says of this closet, which he has had "in constant use :"

"It was filled the 20th of May, 1869. The closet was used daily until the 20th of August, when the supply of earth was exhausted, and the tank was filled. The tank was then emptied into a large box in the same room, and the reservoir was partly filled with fresh earth. Late in October this earth was ex-

hausted, and it was found that that which had been taken out of the tank in August was dry enough to be used again. It was accordingly sifted and put into the hopper. There was no vestige of paper, except a little near the top of the mass, and in the whole there was not more than half a peck of solid feces. All the rest had been completely absorbed and disintegrated by the earth. This small quantity which probably had not decayed for want of moisture, had, when broken, the appearance and odor of rotten wood. This same lot of earth, having passed through the closet a second time, was, with its contents of excrement, removed from the tank into the box on the 24th of December, and it now has exactly the appearance and odour of any moist earth.

"Since the cool weather commenced in October,



PORTABLE COMMODE.

this room has remained entirely unventilated, save by the occasional opening of the door leading to the office; yet it has at no time had any other odor than it would have had had it contained only a cart-load of gardener's potting-earth.

This closet may be made larger or smaller, according to the space available for it, or to the capacity required. With a vault large enough, its deposits might remain undisturbed for years, or, if necessary, they may be daily removed. Where there is only a small closet space available, the earth closet may be built like an ordinary Commode, raised a foot higher to admit a large box in place of the hod, and with its back carried up a foot or two above the top of the vibrating hopper.

There are other appliances suitable for city houses, or large mansions, providing an earth closet for every flat, and a common shaft for supplying the dry earth and removing that which has been used, but we have not space for illustrating or describing them, nor would they be of service to the majority of our readers. All who desire fuller information on the subject can obtain it by addressing the "Earth Closet Company, Hartford, Conn.," or the Agency of the Company, 109 Dearborn Street, Chicago. There can, however, be little doubt that the Dry Earth System is destined to supersede water-closets, since it obviates the following undeniable objections:

1. The enormous cost of the works required, in proportion to the small amount of noxious material to be removed.
2. The large annual outlay required to keep the closets in order. Experience in large cities has shown that, on this account, these closets are quite unsuitable for the dwellings of the poor.
3. The enormous amount of water employed, (estimated at 365 times the weight of the excreta), whereas in many towns there is much difficulty in obtaining it.
4. That it results in a subterranean flood of filthy water, which must flow somewhere; and wherever it flows it pollutes the region, thus disseminating and distributing the evil.

5. This material, worth about 30s. per ton, has its value reduced by dilution to 1d. per ton, which it is impossible, by any known chemical method, to extract with profit.

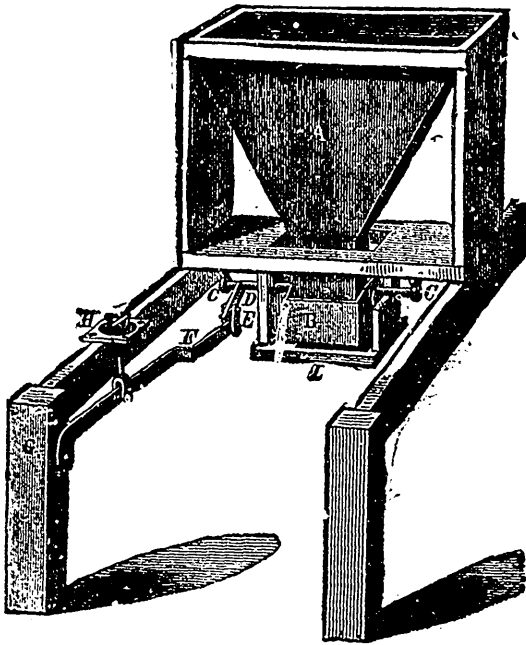
6. The large generation of noxious gases in the sewers, which constantly escape into our streets and houses.

To sum up, and bring this long article to a conclusion, although the subject is far from being exhausted, or even thoroughly opened up, we quote again from Col. Waring's able pen:—

"Precisely what the Earth-Closet and its accessories, as now contrived, accomplish, is the following:

1. A comfortable closet on any floor of the house, supplied with earth, and cleansed of its deposits without the intervention or knowledge of any member of the household.
2. A portable commode in any dressing room, bedroom, or closet, the care of which is no more disagreeable than is that of an anthracite stove.
3. Appliances for the use of immovable invalids which entirely remove the distressing accompaniments of their care.
4. The complete and effectual removal of all the liquid wastes of sleeping-rooms and kitchen.
5. The utilizing of a manure worth (including kitchen and laundry wastes) at least \$10 per annum for each member of the family, old and young.
6. The removal of the most fertile source of typhoid fever and dysentery, and the prevention of cholera infection.
7. The complete suppression of the odors which, despite the comfort and elegance of modern living, still hang about our cess-pools and privy-vaults, and attend the removal of their contents."

It would be unjust, and a transgression of that Scripture, "Render unto all their dues; Honour to whom honour;" if we did not state that the world owes the discovery and application of the Dry Earth System to a Clergyman in England, the Rev. H. Moule. This gentleman has well earned the thanks of his kind, and will yet have conceded to him a high place among the benefactors of the



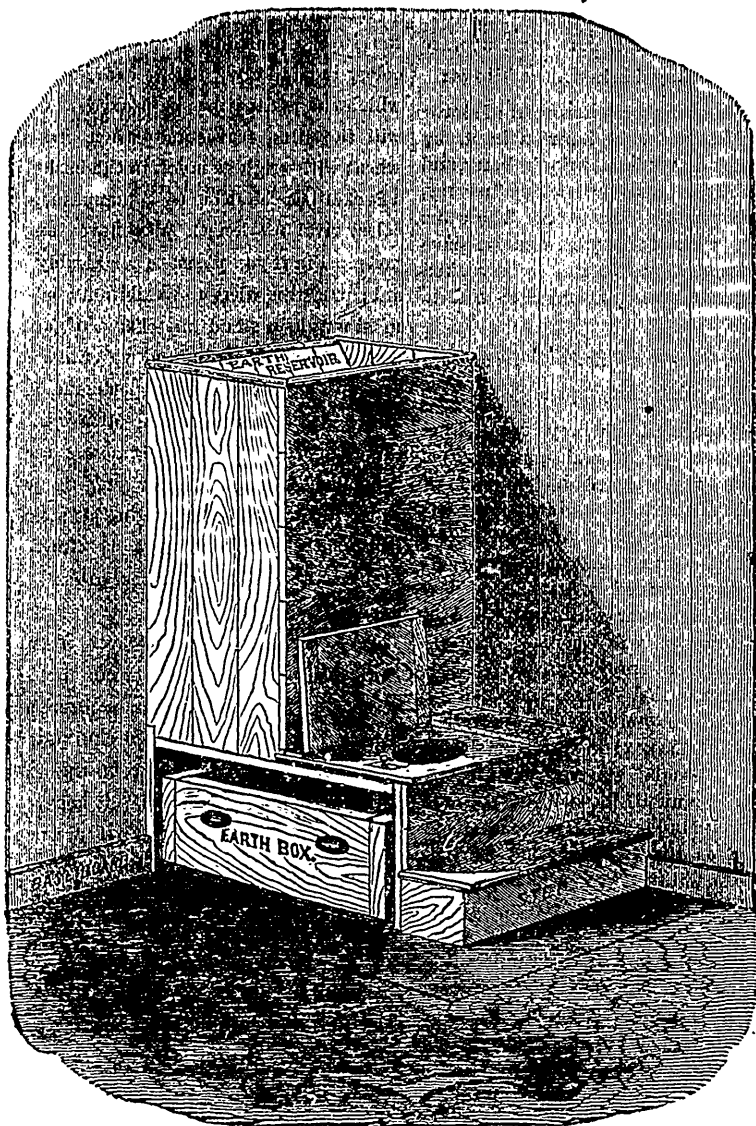
THE MECHANICAL PARTS OF THE COMMODE.

THE SAME FIGURES A - E USED IN CLOSETS.

human race. Nor is this the only case, by a multitude of others, though we say it who perhaps should not, in which the members of his profession have laid their fellow-men under obligation for

EXHIBITION MANAGEMENT.

Our excellent contemporary, *Heart and Home*, has an article in a recent issue on the above sub-



CLOSET IN CORNER OF ROOM.

services rendered to the material interests of society, in addition to what they have done in promotion of its moral, spiritual, and eternal interests. Agriculture especially is largely indebted to the clergy for many eminent services.

ject, most of which we very thoroughly endorse, but there is one point on which we are obliged to vote "non-concurrence." A number of timely and common-sense hints are given on the early preparation of prize-lists, the importance of seeing that all articles exhibited are true to name, attention to the

"get-up" of everything shown so that it may appear to the best advantage possible, proper protection of plants, flowers and all delicate objects; also on the necessity of all fruits and vegetables being tasted or cut open by the judges. In reference to the last-named particular our contemporary makes one or two startling disclosures as follows:

"We have known every berry in a quart of strawberries have a good-sized shot inserted in it, by lifting a calyx-leaf and pressing it into the berry, and this only detected by an outsider "hooking," a berry, and finding the shot between his teeth. The same thing may be done with other fruits, and we have known gooseberries and strawberries to be soaked in water, and vegetables also, in order to add to their weight."

But we took pen in hand chiefly to record our dissent from the following paragraph:

"Secondly, every society should keep a record from year to year of the size, weight, and appearance of all grains, fruits, and vegetables exhibited, the finest of which should have the first premium; but afterward, no first premium should be awarded, unless the article exceeded in quality that of the same sort which had previously obtained a first prize. For instance, if John Doe this year exhibits a bushel of Diehl wheat weighing sixty-five pounds, then no first premium should be awarded to any person, in any future year, for a bushel of the same variety, unless it should weigh sixty-six pounds; and that weight being attained, the next first premium should be awarded to a bushel weighing sixty-seven pounds, and so on. Again, if Richard Roe exhibits six Seckel pears weighing twenty-four ounces, that should be accepted as the standard, and no first prize afterward given unless that weight is surpassed. If celery is exhibited blanched thirty-two inches, and a certain weight, that should be the standard, and no first premium afterward awarded unless it is surpassed in both respects; and so with all products grown from the soil. The object of giving premiums being to excite emulation, and to incite cultivators to improve the qualities of grain, fruit, and vegetables, it is very short-sighted to do away with wholesome rivalry, by giving in one year a premium for wheat weighing sixty-four pounds to the bushel, and the next year four to six pounds less—the latter only having the opportunity to take such a premium, perhaps, because the party who had previously shown it at sixty-four pounds has refrained from exhibiting, although this year he had it of equal weight with that grown last year, thus placing both on the same level as to skill, excellence, etc."

So far as the manifest object of the foregoing

paragraph is concerned, viz: to prevent really inferior products being rewarded by premiums, we are wholly in sympathy with it, but the ground taken is ultra to the verge of impossibility. You cannot go on increasing the weight of a bushel of wheat, the size of a Seckel pear, and the length of blanched celery indefinitely; nature has her limits beyond which she will neither be coaxed nor forced; nor will the time ever come when, in this climate, wheat will weigh as much to the bushel as shot, or a Seckel pear be as big as a pumpkin, or blanched celery rival for length pike-staves and telegraph poles. Fix if you please a practicably high standard; prescribe what an exhibition bushel of wheat must weigh to stand any chance of getting a prize; do the same with fruit and vegetables; positively refuse to premium inferior specimens, and you do all that it is reasonable and fair to attempt. As there are "points" for judging horses and cattle, a "standard of excellence" for judging poultry, &c., so let there be rules for judging all articles, and by no means give a prize to a specimen because it happens to be the best on the ground when it is notoriously below par.

There is one difficulty however, in even going so far as this, which ought not to be overlooked. Seasons differ. With the same culture a bushel of wheat will vary in weight, a Seckel pear in size, and a stalk of celery in length, from this cause alone. Will you punish man for what it is beyond his power to control? Or will you put a premium upon special cultivation for exhibition purposes, such as leads gooseberry-growers in England to "suckle" as it is called a few berries on each bush, by placing saucers of water under them? It is not this extra petting of a few samples for the sake of winning a prize that we want, but good, faithful, diligent culture such as can be bestowed on whole crops, orchards, and farms.

There is surely a *via media* of reasonable practicability and inspiring emulation between the looseness of bestowing premiums on unworthy objects because no better are present, and the ultraism of demanding the attainment of a higher point each and every time of exhibition. The subject is important, and it is high time it were thoroughly ventilated. If this article shall help at all in drawing attention to the matter, our end in writing it will be attained.

MUSIC.—A two-page piece of music expected for our present issue has been unavoidably delayed, but will appear in our next.

EDITORIAL GLEANINGS.

Some curious statistician has found out that the whole amount of grain raised in New England each year would not supply its inhabitants six weeks.

Some one thinks that the bane of agriculture is the idea that a man who owns four hundred acres is probably four times as rich and prosperous as he who owns and tills one hundred.

NEW VOLUME OF THE AMERICAN SHORT-HORN HERD BOOK.—We learn by a circular and note received from Mr. L. F. Allen, that another volume, the 10th, of the American Short-horn Herd Book is in preparation and will shortly be issued.

A MICHIGAN man has just returned from an extended tour through California. He says, that from all he has seen, that Michigan is a better State in all respects than California; that if a man is doing well here, whether a farmer, merchant, mechanic or laborer, he had better remain, and if he is not doing well, neither California nor any of the Western States can offer reliably any better chance.

PROFESSOR S. N. JOHNSON, of Yale College, who is high authority on agricultural chemistry, writes approvingly of the "earth closet," saying that it is of the highest interest and importance. It enables us to effect a more than Chinese economy of our night soil, in combination with the utmost cleanliness, convenience and cheapness.

DAMAGE TO WHEAT.—The report of the Department of Agriculture for June, says: "Among the diseases and casualties reported, rust has had a very limited range; hail storms have caused damage in the Ohio Valley; driving rains have beaten down some fields in Virginia and North Carolina; Utah has been ravaged by grasshoppers; and in Contra Costa county California, squirrels have taken wheat "by the acre daily," until public meetings have been called to repel the invaders.

THE FIRST WHEAT!—Mr. Isaac Poole, of the Township of Oxford, County of Kent, writes the *Globe* that on Monday, June 27th, he commenced cutting his Fall wheat, and that it appears, so far, to be a fair average crop. It is difficult to keep extraordinary occurrences in recollection—but we fail to recall to mind any season in which wheat was cut in Canada on so early a day in the season.

LARGE HONEY RETURNS.—The *Home Journal*, of Louisville, Ky., says that on Tuesday of last week Messrs. Brown & Burbank, of that city, shipped to Chicago and Cincinnati 1,650 lbs. of honey. It further states that this firm will realize this season from 80 stocks of bees, four thousand pounds of excellent honey—a result that will be regarded, by the parties concerned at least, as a satisfactory proof that bee-keeping is not unprofitable.

NEW PERIODICAL.—"LIVE STOCK."—This is the title of a new American periodical, devoted, as its name implies, chiefly to the live stock department of agriculture, including horses, cattle, the dairy and poultry-yard. The first number has been received, and is a handsome quarto of 24 pages, containing useful practical articles, original and selected, and two illustrations. It is edited by Mr. G. A.

Martin, and published monthly by H. C. Springer & Co., Buffalo, the subscription price being \$1 50 (Am. cur.) per annum.

THE LONDON HORSE SHOW.—The seventh annual show of horses, in the Agricultural Hall, Islington, commenced on the 6th of June, continuing open till the 10th. It was, judging by the reports of such journals as the *Mark Lane Express* and *Bell's Weekly Messenger*, equal in merit to its predecessors. The number of entries, and also of exhibitors, exceeded those of 1869; though the names of some of the most famous studmasters were absent from the list of competitors. The first prize in weight-carrying hunters was won by Sir Watkin Wynn for Exgectation; the second by Captain T. Anstruther Thompson, for Iris; Mr. H. Saunders' horse, Ironmaster, taking the lead in the same class. There was also a fine show in other classes, including thoroughbreds, road and carriage horses, &c.

BATH AND WEST OF ENGLAND AGRICULTURAL EXHIBITION.—The annual show of one of the oldest agricultural associations in Great Britain—that of the Bath and West of England Society—opened on the 6th of June, at Taunton, in Somersetshire. The society is now in the 75th year of its existence, and has been a zealous organization in promoting the improvement of British agriculture, which during the present century has made such rapid strides. The recent exhibitions appear, from all accounts, to have been worthy of the society's reputation. The show of Devon cattle, especially, was remarkably fine, while that of Herefords closely rivalled it in numbers, and exhibited a marked improvement on former years. The number of Durhams in competition was below either of the above classes. The chief feature of the show was the splendid display of Somerset and Dorset horned sheep, which were of such excellence as almost to warrant, says the *Mark Lane Express*, the distinct recognition of these breeds, for which flockmasters are moving. Other live stock, including poultry, were well represented, and there was an extensive and interesting display of implements.

EDITOR'S BOOK TABLE.

MAN AND WIFE.—A novel, by Wilkie Collins; Toronto: Hunter, Rose, & Co. This publication is destined to be historical, as the first issued under the Copyright Law of the Dominion of Canada, and we congratulate our late publishers on the honor they have won themselves by their prompt business enterprise. We may add that the typography and the general get-up of the work does them great credit. In reference to the work itself, we may say it is the first of Wilkie Collins's that we have read, and we should probably have never taken the trouble to read this, had it not been sent us for Editorial notice. We find enough of the sensational and exciting in real life, without journeying into the realms of fiction in search of them, and our want of experience in novel reading to some extent incapacitates us from acting the critic's part. We confess, however, to having perused "Man and Wife" with unflagging interest, and with no small

eagerness to know how the story would end, and we take it, that the power of awakening such feelings is pretty sure to make a book of fiction saleable and readable. So far as we can judge, the plot of the story is very skilfully arranged, the characters are well delineated, the moral tone is unexceptionable, and the tale is likely to be useful in drawing attention to the anomalies of Scotch law respecting marriage; in putting young men and women on their guard against imprudencies and immoralities; in showing the uselessness of muscular without corresponding mental and moral development; and in correcting hasty opinions as to character and conduct. If we are not mistaken, we shut the book with deeper sympathy and broader charity for our fellow-men, with stronger contempt for vice and higher appreciation of virtue, and with firmer trust in Providence than we had when we opened it. We commend it to all and sundry.

LOTHAIR.—By the Right Hon. Benjamin Disraeli; Guelph: T. J. Day.—A remarkable book to come from the pen of such a man as the leader of "Her Majesty's Opposition" in the British House of Commons. It shows up the intrigues and influences by which the Church of Rome seeks to inveigle the Protestant nobility and gentry of Britain into her communion. "Lothair" is a young lord of boundless wealth, not yet of age, and in that plastic, ardent period of life which renders him very susceptible to impression and influence. He is made the victim of any amount of scheming and wire-pulling, more particularly by lovely and plausible ladies, with a view of getting him and his wealth over to Romanism. If this is a picture of what is going on in real life, and we have here, as is probable, a revelation of the actual history in aristocratic circles at home, the book cannot fail to have a mighty influence in opening the eyes of the unwary and putting them on their guard against the artful proselitizers. There are evidently side objects aimed at as well as the leading object of the book, and one of the cleverest as well as the severest things in it, is the cut at "the Oxford professor," which Mr. Goldwin Smith was in such a foolish hurry to take to himself. "Lothair" is deeply interesting as a story; there are many brilliant passages in it; the cause of Protestantism will doubtless be helped by it; and altogether it is not unworthy the reputation literary and political, of its distinguished author.

HARRIS ON THE PIG.—New York: O. Judd, & Co. "O what a falling off was there, my countrymen!" To come down from conjugal bowers, baronial mansions, and ecclesiastical piles, to pig-sties! But we can't help it. Such is life. The novel-be-witched miss or madam will turn to ham and eggs with a relish after an hour or two before breakfast at "Man

and Wife" or "Lothair," and if the ham is to be worth eating attention must be paid by somebody or other to pig-breeding and pig-feeding. The author of this work is Mr. Joseph Harris, formerly editor of the *Genesee Farmer*, and at present an associate editor of the *American Agriculturist*. It is doubtful if there be in Europe, Asia, Africa or America a man better fitted to write such a book. His name is a guarantee for thorough knowledge of his subject and able treatment of it. The book might have been entitled, "All about the Pig;" for there is little relating to the history, breeding, rearing, feeding, and general management of that animal which is not to be found in these well-filled pages. To the young farmer it is invaluable, and there are few old experienced farmers who may not glean a large amount of useful information from this book. It is copiously and beautifully illustrated, and 'got out in O. Judd & Co.'s best style, which is saying all that need be said as to the publishers' part of the business. Price, post paid, \$1 50 American currency.

PEACH CULTURE.—By James Alexander Fulton; New York: O. Judd, & Co. The author of this work, who lives in the very centre of the best peach-growing district of the United States, and is himself a peach raiser, sets forth what he aims to do in his treatise as follows:

1. To give plain, simple and specific directions for rearing the trees, for planting and cultivating an orchard, for gathering and marketing the fruit, with some data as to its profitableness as a distinct branch of agriculture.

2. To point out, clearly and distinctly the imposition practiced by railroad companies and consignees upon planters, and the means of redress.

3. To indicate and briefly describe the varieties that pay, and the way to enable young planters, as well as old ones, planting new orchards, to select the most profitable kinds, and thus benefiting the whole community, by increasing the productiveness of our farms and the profits of our planters.

Our effort has been to make it a hand-book and guide to every planter, to be used as a student uses his dictionary in the acquisition of language."

The work realizes these objects very faithfully, and cannot fail to be useful to all who are fortunate enough to live where the delicious fruit treated of can be grown out of doors. Price \$1 50, post paid, American currency.

CRANBERRY CULTURE.—By Joseph J. White, a practical grower. New York: O. Judd & Co. Those who imagine that cranberries can be profitably grown in any kind of a swamp, by just draining off the water, and then flinging a lot of plants on the black muck, will be undeceived by reading this little treatise, while these who are intelligent enough to know that nothing of importance can be achieved without corresponding effort and painstaking, will find here a judicious counsellor. There

are many farmers who possess just the right kind of land for growing cranberries, who could profitably engage in their culture. It is a most useful plant, always commanding ready sale, at a remunerative price, and it were well if hundreds of acres of waste places on our farms were converted into cranberry meadows. We commend this timely publication to all who have any thought of going into cranberry culture, or are already engaged in it. Price, post paid, \$1.25, American currency.

BEETON'S GARDEN MANAGEMENT AND RURAL ECONOMY.—Guelph: T. J. Day. Like all Beeton's handbooks, this is brief, comprehensive, judicious, and finely illustrated. It is to be completed in 12 monthly parts. Mr. Day will send a specimen number post paid, for 15 cents, or the whole series complete for \$2.00.

THE LAND QUESTION OF IRELAND.—Guelph: T. J. Day. This work consists of a series of letters published in the London *Times* from the pen of a Special Commissioner sent by that enterprising newspaper concern to investigate the whole subject on the spot. It is a pamphlet of 147 pages with a reference map. Sent by mail for 30 cents.

THE LEISURE HOUR, for July.—Guelph: T. J. Day. This well-known monthly costs \$1 80 per annum.

The Farm.

ARE OUR SOILS DETERIORATING?

The *Country Gentleman* contains the following discussion, which took place recently at the Ithaca Farmers' Club. Our farmers and gardeners might gather something from it:

Mr. Arnold read a paper on the subject "Are our soils deteriorating?" He said that the first settlers pursued the policy of taking from the soil all they could get, and returning as little as they could help. This policy had been commenced at the east, and was now vigorously prosecuted at the west. But the eastern farmers, after running their farms nearly out, saw the necessity of improving them and went to work to that end. This movement also, was going on from east to west. The question for us is—on which side of that improvement are we? By a reference to the census tables for 1845 and those of 1865, Mr. Arnold showed that in every crop except oats there was a gratifying advance in the average amount per acre yielded in 1865 compared with 1845. The decrease in the oat crop he attributed to the dryness of the census year, 1864. So our soil is undoubtedly improving. There are two sources of improvement.—I. Barn yard manure.—II. Green crops. We cannot doubt that our improvement is due almost entirely to the latter, and mainly to clover. In order to keep up the fertility of our soil we need to return to it as much as we take from it. Now we do not return, in barn yard manure, one quarter of what the crops take off. But a rotation in which clover takes a prominent place has a wonderful power of improving worn out land. Various instances were given in support of this

theory. Twenty years ago, a farm was bought for \$12 per acre; it was gravelly, poor, and thoroughly worn out. The owners now get first-rate crops from it, and would not take \$100 per acre for it now. This has been accomplished by clover.

Prof. Caldwell said he was surprised, although agreeably so, to hear that the land was not deteriorating. When he saw the manner in which the manure was almost universally managed, it was strange to him that the land did improve. He thought that it would require returns from three to four years in succession to prove this. In Germany, by the most careful farming and account keeping, they can see their soils improving. But for this they husband every portion of their barn yard manure. And we must do the same if we would continue to advance. But improvement by the growth of clover, which acts very much by bringing up stores of plant-food from a lower stratum will probably not last very long.

Col. Brewer admitted that the manure was wasted, and said that, to be properly saved, it must be under cover. As to fertility, he thought there was a wonderful improvement. Forty years ago, there were hundreds of acres bare, and apparently worn out, which are now giving luxuriant crops. This is owing very much to clover, of which there are six bushels sown now where there was not one sowed at that period. There is nothing that will improve land as quickly as a liberal growth of clover.

Prof. Caldwell remarked that he had seen large piles of unused straw in barn yards, and from these yards a rich stream of manure running. This straw ought to have been used to soak up the liquid. The sun's rays do not nearly so much harm to manure as to have it washed by the rain.

Mr. T. B. Crandall said that dry muck was the best thing to absorb it; if this is not attainable use dry dust or saw dust.

A rather desultory discussion followed, in the course of which it was said that one load of manure applied as top-dressing was worth three ploughed under—that dry straw applied in October on land to be broken up next spring, nearly equalled rotten manure in its effects.

THE COLORADO POTATO-BEETLE has made its appearance on the western border of Ontario. Every effort should be used to effect its destruction. A mixture of Paris Green with flour or ashes dusted over the effected plants in the morning while the dew is on, has been found the most efficacious application. Paris Green is a deadly poison, and should be used with the greatest care. It should be so applied that the wind will carry the dust away from the operator. Children should be kept from it. The proportions recommended are one pound of Paris green to two pounds of flour; this quantity will serve an acre.

WHEN OUGHT LIME TO BE APPLIED.—A writer in the *Practical Farmer* has the following to offer on this subject: "Lime will hasten the decomposition of inert inorganic matter. This fact would lead us to suppose that it should be applied to the sod before it is turned under for corn, for at no other time does the soil contain so much organic material which must be decomposed before it can benefit

our crops. Another important item to remember is, that lime drives off ammonia from partially decayed and fermenting manures. From this it would seem that lime should be applied only several years after or before an application of manure. It is true that fresh lime may be used with advantage in the composite heap with fresh manure, provided enough earth is added to absorb the ammonia, so liberated. To convince any one that lime will expel ammonia, it is only needful to mix a small proportion with guano or other manure rich in ammonia, and it will soon be evident enough to convince even the most dubious. Another very evident point is, that lime requires some time to act, and of course it should be applied some time before it is expected to act on the crop. The time which must elapse before this action begins seems to vary very much with the lime from different quarries; from some it seems to act almost as quickly as manure, and from others it requires several months before its action can be seen. After several years' experience and experiment, I am satisfied that the best time for me to apply lime is on the sod the fall before ploughing for the corn crop."

EFFECTS OF POTASH.

There can be no doubt that ashes, both leached and unleached, or a solution of crude potash diluted or mixed with peat or earth, may be applied to nearly all crops, grasses, cereals, roots and fruits with the best results. Indeed, in this country, where ashes are abundant and cheap, they form one of the best and readiest means of giving heart to light or exhausted soils. It is a poor policy for any one who has a farm, garden, or orchard, to sell ashes, unless he can easily restore an equivalent in leached ashes, soap-suds and other alkaline matters.

Way are Ashes Beneficial.—A glance at the chemical composition of grains, roots, grasses, etc., will at once reveal the reason, or rather one reason, why ashes are so beneficial. If the product of an acre of wheat, estimated at twenty-five bushels of grain, and three-fifths of a ton of straw, be burned, grain, straw, chaff and all, their will be left about two hundred and ten pounds of ashes, containing about fifty-six pounds of potash, soda, magnesia and lime, (mostly potash,) united with about thirty-one pounds of phosphoric and other acids; one hundred and eighteen pounds of siliceous sand, and a little oxide of iron, chlorine, etc. Again, suppose twenty tons be taken as an average crop of turnips per acre. Of these twenty tons two tons will be solid matter, with eighteen tons of water. The two tons of dry matter burned will yield three hundred and forty pounds of ashes. The tops of these turnips may be estimated to yield (as they would in a fair average crop) two hundred and ten pounds of ashes, making six hundred and fifty pounds of ashes for the product of an acre. Of these ashes less than one-twentieth is salicic, while considerably more than one-third is potash (potassa) and between one-fifth and one-sixth is lime. In the wheat ash there is twice as much phosphoric or sulphuric acid, while in the turnip ash there is nearly twice as much sulphuric as phosphoric about, one hundred and forty pounds taken together. If one hundred pounds of pears be dried and burned they will yield about four pounds of ashes, of which more than one-half will be potash and less than one eighth soda, while in the ash of apples about one-third is potash and

one-fourth soda. Thus, as every sort of crop abstracts from the soil those mineral constituents which exists there only in limited quantities, it is evident these constituents must be restored in some way in order to insure good crops in the future. And even that element in the soil, sand, which seems so abundant and which is a necessary constituent of nearly all plants, and found in large quantities in the stalks of grains and grasses, the bark of trees, etc., is practically useless on account of its insolubility unless potash be present to make it soluble, so that it can be assimilated by the plant.—*Prof. Strong.*

BEEF CULTURE IN FRANCE.

Now that the culture of beet is almost everywhere assuming such great proportions, a French implement maker has brought out a very simple and effective machine for lifting the roots. It is in the form of a plough on wheels, with a sock pointing into the soil to raise the roots, and a sort of swinging mouldboard to throw them aside, when women and children can follow and trim the bulbs. This "blind plough," worked by a pair of horses and one man, can get over two and a half acres per day. Further, a pressing machine has appeared for the extraction of the juice of the beet, which effects in ten minutes what with the ordinary processes of maceration require as many hours. The pulp is made to pass between two rollers, exerting a pressure equal to two atmospheres, the pulp passing over the cylinders, the juice, perfectly pure, flowing through the perforations into the fermenting vats. The pulp is taken up a second time and pressed, when the necessary acid is added. The pulp by this process preserves for a long time its quality for feeding purposes, the juice ferments more equally, and a higher per centage of alcohol is obtained. One of the principal obstacles hitherto experienced in the extension of the culture of beet for sugar, was the expense of carting the roots to the grater of the factory. In almost all the large sugar manufactories in France, pipes, ranging from three to nine inches diameter, communicate with the pulping depots, erected in the vicinity of the producer. In some cases a direct line of pipe communicates over a distance of seven miles, irrespective of branches, thus saving the farmer cartage, and enabling the manufacturer to erect his establishment close to a river, canal or railway, and save expense in the transport of coal, lime, animal charcoal and machinery. One factory alone has 228 miles of communicating pipes laid down, to convey the juice of two hundred thousand ton of beet. The juice, by admixture of hydrate of lime, is preserved from any alteration in its properties, and the pipes are sunk along the roadways at the depth of three feet. The farmer, while thus disposing of his beet almost on the field, has the pulp equally convenient to feed and fatten his stock.

HARVESTING BARLEY.

It is a point of importance to cut this crop just at the right time, which is known by the ears beginning to droop and turn over against the stems, which will then be of a yellowish color. Barley is so extremely liable to shell out whenever it becomes over-ripe, that much loss may result to the

crop from putting off the cutting of it for even two or three days. Generally it may be cut by the reaper, and if cut when about half-ripe, it may lie in the swarth a day or two before being raked up and carried to the barn. The straw being less flinty than that of wheat, the crop becomes very liable to lodge, especially if heavy rains and high winds occur when it is in bloom. Should the crop stand up fairly at harvest time, it is the best plan to have it bound in sheaves and shocked at once. This, however, is rarely done, most farmers preferring to leave it in the swarth, and rake it into small cocks before being carried to the barn. This requires less labor and trouble, but results in more loss than if the crop were bound and shocked at once, and should a wet season come the barley in swarth or cock will be apt to become much discolored and damaged, while if in shock it can be capped at once on the approach of rain. One thing ought particularly to be attended to, and that is, not to allow the different qualities to get mixed together in the mow, or at thrashing time. A very little of it may get discolored by rain, and this thrown in along with the rest, spoils the marketable appearance of the whole crop. Better keep that which is clean and bright separate from the other, in order to get a higher price for it. Buyers are much more particular in selecting this grain than any other, and a little care and judgment at harvesting and thrashing times may put a good many extra dollars in the pocket of the grower.—*Globe*.

STIRRING THE SOIL IN SUMMER.

During the driest weather there exists the greatest necessity for constantly stirring the soil among the corn and root crops. It may seem an anomaly to most farmers, yet it is nevertheless true, that the more you stir the soil during the dry season the more moisture can the crop imbibe. The freshly stirred soil is a great attractor of moisture and ammonia from the atmosphere, and what is imbibed at the surface during the night, especially when the dews are heavy, is quickly conveyed down to the roots of the plants grown on the surface. Even on the lightest soils, the advantages of the practice are great. Our farmers do not yet sufficiently appreciate the advantage to be derived from a frequent use of the horse-hoe or turnip cultivator. Instead of one only being kept, every farmer who grows five acres or more of roots should have one for every five acres he puts in corn, potatoes, or other roots, so that every available horse on the farm can be put to work in the early mornings and evenings, to run the implements between the rows as often as possible, even though it should be on land that is perfectly clean, and seemingly not requiring such work to be done to it. When rain falls this can be suspended till the moisture is absorbed into the soil. Keep the cultivators going whenever possible, and you will reap rich results in a larger and better yield of corn or roots, more than will ten times overbalance the additional labor, which can be generally given when least available elsewhere.—*Globe*.

AMERICAN AND ENGLISH MOWING MACHINES.

Reaping and mowing machines have now be-

come standard implements on English farms, but in France they are still regarded somewhat as innovations; the lower rate of wages across the channel having hitherto acted as a barrier to the introduction of labor-saving machines in agriculture. Wages, however, are rising in France, as in most other countries, and the attention, therefore, of agriculturists is directed to the best form of reaping and mowing machine. Several international trials of these machines are announced for the coming summer. The first came off last week at Bourges, 123 miles south of Paris, at which there was a very sharp contest between the English and American machines. The *Ironmonger* states that after a long and careful trial the award was given in favor of the English machines of Messrs Howard, of Bedford, which in mowing an acre beat the far famed American machines of Mr. W. A. Wood, and Mr. McCormick, by eighteen minutes. American manufacturers must look to their laurels.—*Scientific American*.

FARM GLEANINGS.

Prof. Caldwell says in France and Germany, clover is put in pits when cut and allowed to ferment slightly; it comes out tender and excellent.

A genuine Yankee at Lisbon, Ct., wanting to put a water-pipe through a drain several feet below the surface without digging up the drain, tied a string to a cat's leg, thrust her into one end of the drain, and giving a terrific "scat" the feline quickly appeared at the other end. The pipe was drawn through the drain by means of the line, and an expense of ten dollars saved by the operation.

The favorable working weather of the present season may enable farmers to profit by some hints in the *Herald of Health*, to the effect that boys do not like to dig potatoes from frozen ground, or gather corn when the husks are stiff with ice. The failure to do work in season, which results from a miserable slack and slipshod management, is what often sends away the hired man, and estranges the affections of the boys from the homestead.

A correspondent of the *Boston Cultivator* says: I have an unscientific way of dissolving bones. I save all the bones and put them into a boiler with a quantity of good hard wood ashes, pour in water enough to make a thick porridge and boil from two to three hours, when the bones will be completely broken down; then add an equal bulk of dry muck or loam, and one peck of plaster to every two bushels of mixture, and you have an excellent fertilizer for any kind of soil.

Dr. Morse, editor of the *Journal of Agriculture* at St. Louis, recently stated in the St. Louis Farmers Club that he considered it, as a rule, a slovenly practice to stack hay. All of the outside of the stack, at least, will be weather-beaten and worthless. The loss by stacking will be enough in a few years to build a barn, or at least cheap sheds for hay. He is not certain that it would not pay to use hay caps. In some precarious seasons, they would be very useful. He would at least like to see them tried.

At a late discussion on making hay, by the Herkimer County, N. Y., Farmers' Club, Mr. Burdick asked if a poorer quality of hay had not been made since the introduction of the mowing machine, up to the time of the introduction of the tedder. The members were decided in their opinion that such

was the case. They all believed that the hay, as it lay after being cut by the machine, did not cure as well as when cut by the hand scythe and spread with a fork. Hence they all considered the tedder indispensable where the mowing machine is used.

A writer in the St. Louis *Journal of Agriculture* says: I have to remark, that for years I grew orchard grass with red clover. I sowed two bushels orchard grass seed and six quarts of clover to the acre. My soil was a gravelly clay, and I cut year after year two crops in a season, cutting just as the grasses were in flower—for they flower together—mowing in the morning or forenoon; raking and cocking in the afternoon; leaving it two days in the cock, if the weather allowed, then opening out in the forenoon and drawing it in the afternoon. No animal—cow, horse or sheep—all of which I then had—but would eat it ravenously, and always picked the orchard grass from the clover—if any was left in the manger it was sure to be clover.

Some years ago Mr. J. J. Thomas, who stands among the foremost practical men of this or any other country in matters pertaining to agriculture, offered a reward of five hundred dollars for a head of wheat and a head of chess from the same root. This offer was kept standing in the *Country Gentleman* several months. From the immense number of plants which the transmutationists claim turn from wheat to chess every year, it seems that it would have been an easy matter for farmers to draw very heavily on Mr. Thomas' exchequer; but, strange to relate, not a man appeared as an applicant for the reward.

The Live Stock.

EXTRAORDINARY SALE OF SHORT HORNS.

A most remarkable sale of Short-horns, which is worthy of note on account of the number of animals sold, their superior excellence, and the high prices realised, took place on the 8th of June, at the farm of Mr. McMillan, Xenia, Ohio. The sum total and the average price of each animal exceeded the results of any previous sales of Short-horns, not only on this Continent, but also in Great Britain.

A correspondent of the *Country Gentleman* furnishes the following details of the sale:

COWS AND HEIFERS, OVER \$500.

Mignonnette, 6 yrs, C. C. & R. H. Parks, Waukegan, Ill.	\$3,800
4th Louan of Oakland, 1 yr, J. C. Jenkins, Petersburg, Ky.	3,650
Louan 21st, 7 yrs, George Murray, Racine, Wis.	3,600
Winona, 4 yrs, W. J. Neely, La Salle, Ill.	3,000
Louan 35th, 5 yrs, and calf, E. G. Belford, Paris, Ky.	2,925
Forest Queen, 1 yr, George Murray, Racine, Wis.	2,800
Highland Lady and calf, 5 yrs, J. H. Spears, Tallula, Ill.	2,025
Louan 23rd, 7 yrs, A. J. Dunlap, Galesburg, Ill.	1,750
Louan 39th, 5 yrs, D. J. McGibbons	1,650
6th Louan of Oakland, 1 yr, George Murray	2,050
6th Duchess of Oakland, 2 yrs, George Gregg, Beechville, Ont.	1,510
Linda Bell 2nd, 2 yrs, J. H. Spears, Tallula, Ill.	1,525
7th Duchess of Oakland, 2 yrs, James Fullington, Union Co., O.	1,400
Fibra Bell 3rd, 1 yr, J. Spears, Tallula, Ill.	1,325
Magenta, 4 mos, do. do.	1,105
Oxford Duchess, 4 yrs, W. Paine, Ind.	1,075
Fanny Hunt, 3 yrs, A. J. Dunlap, Galesburg.	1,025
Myrtle, 1 yrs, and calf, James Fullington.	1,005
Anna Clark, 2 yrs, Milton Briggs, Ind.	950

Louan of Oakland, 4 yrs, do.	800
Clinton Lady, 9 yrs, J. Hagler, Fayette Co., O.	850
Louan 12th, 11 yrs, R. G. Dunn, Madison Co., O.	800
Rosa Bonheur, 3 yrs, James Fullington.	750
Eudora 2nd, 1 yr, H. B. Campbell, Batavia, Ill.	910
Emma, 5 yrs, do. do.	722
Honey Bud, 2 yrs, do. do.	800
3rd Louan of Oakland, 1 yr, J. W. Armstrong, La Salle Co., Ill.	600
Oxford Queen, 5 mos, J. W. Armstrong	550
Vain Lady, 2 yrs, B. H. Campbell	525
Bride of Greenwood, 6 yrs, J. Gregg	525
May Day 11 yrs, B. H. Campbell	525
Minna Watson, 8 mos, H. B. Sherman, Toledo, O.	520
Oneoto, 4 yrs, Jesse Hagler	505
Eudora, 4 yrs, Charles Hook, Xenia, O.	500
Emma Farmer, 12 yrs, Thomas Kirk, Fayette Co., Ohio	500

There were ten other cows and heifers that brought \$3,560. The bull "Royal Oakland," brought \$1,300; he went to James Fullington, Union Co., Ohio. "Plumwood Oxford," two years old, sold for \$400, to Mr. Steel, Penn. Nine young bulls brought \$3,650, and we have the following

SUMMARY.

45 cows averaged	\$1,152 66	\$51,870
11 bulls do.	477 27	5,250
56 do.	\$1,020 00	Total \$57,120

There was a lot of Berkshires that were sold, which brought good prices. Mr. J. R. Page, and J. B. Bridgeman, of London, Madison Co., Ohio, were the auctioneers. There were about 800 short-horn breeders there, and among them old Major Duncan.

AYRSHIRE STOCK FOR CANADA.

A recent issue of the *North British Daily Mail* gives the following details of a shipment of valuable stock from Scotland for the Hon. J. S. C. Abbott, of Montreal. The cattle were of the Ayrshire breed, and the selection was made by Mr. Thomas Palliser, of St. Andrews, Quebec:

The lot comprised the following animals:

1. Young Primrose, three years old, and bred by T. W. Fleming, Esq., of Kiel, at his farm in Ayrshire; dam Primrose, winner of many prizes; sire, Napoleon, bred by Mr. Craig, Polquehays, out of a cow which gained the first prize at the great international show, Paris.
2. Young Mary; dam, Mary, winner of four first prizes; sire, Napoleon.
3. Young Beauty; dam, Beauty, winner of three first prizes; sire, Napoleon, also bred by Mr. Fleming.
4. Geneva, three-years-old, with calf at foot, bought from Mr. Knox, Polnoon Lodge, Eaglesham.
5. Young Dandy, bred by and purchased from Mr. Hugh Roger, Altigraun.
6. Duke, yearling bull, also bred by Mr. Roger, dam, Kenneth, winner of five first prizes; sire Collyhill, bred by Duchess of Athole.
7. Yellow-haired Laddie, purchased from Professor McCall, of Gallowhill, Glasgow, and bred by Mrs. Lindsey, Hilloch, Galston. Yellow-haired Laddie is a two-year-old of great promise. As a yearling he proved himself second to none, having carried off the principal prizes at all the open shows.
8. One pig, bred by the Hon. G. R. Vernon, Auchens House, Dundonald, the most successful exhibitor of pigs at the Ayrshire Society's show.

9. One sow pig, bred by the Hon. T. F. Kennedy, Kirkmichael, also a celebrated breeder of swine.

10. A ewe and tup lamb of the Leicester breed, bred by Professor McCall, and from strains of the Bosanquet, Ainslie, and Lord Polworth flock.

GAME FOWLS.

At the present time, the breeding of poultry has attained an importance, which has, at least in this country, never been realized before; and except during the "Cochin mania" of 1847, higher prices are now freely given on all sides for fine specimens of the different breeds of fowls than ever hitherto. Poultry economy has attracted the attention of all classes of our population, and on all sides the most searching scrutiny is being used to ascertain what are the most valuable breed of fowls, with which to stock our yards. Under these circumstances, one cannot fail to be struck with astonishment that the breed which does combine in an almost superlative degree all the qualities that are sought after by poultry fanciers, and all who are engaged in raising this kind of stock, should not receive more attention than it does. I am well aware that there is a numerous class who are enthusiastic, and to a certain extent successful, breeders of game fowls, and I know that many among them will agree with me heartily in what I am about to say. I do not doubt that were the claims of game fowls represented properly, and as they deserve, there are many that now neglect them, who would be forward to do them justice. Whether we look for utility, beauty, or hardiness, the game fowl will be found unrivalled. In support of this, therefore, I shall take these three qualities and show how thoroughly they are combined in this particular breed. The discussion of origin of these fowls is a point that would involve an immense amount of labor, and considerable time, without leading us to any practical conclusion. For general usefulness fowls must be good layers, easy to raise, and when grown, supply a good quantity of fine flesh for the table. The hens must also be good sitters and mothers, while the old fowls themselves should bear confinement well. In all these, the game fowl is pre-eminent. The hens lay eggs, that in flavor are unrivalled, and in size compare with any other breed, and lay them, too, in great numbers; supposing, of course, that they are warmly housed and properly cared for in winter, and a proper run allowed them in summer. Here it is well to call attention to the mis-statement made on this point, in one of the most popular poultry works of the day, which states that they do not thrive well in confinement, and that the eggs are small, all of which is by no means the case. The young chickens are by no means hard to raise; being bright, lively little things, that grow, when once they get fairly started, with astonishing rapidity, and do not in the least deserve the reputation which has been attributed to them of fighting till a large portion of the brood is killed off, by the time they attain a few weeks growth; for whatever combats they get into are more amusing than injurious. These fowls, too, eat an astonishing small quantity in proportion to their size, one Brahma hen eating almost as much as three Game hens would do, and in summer with the aid of a handful or two of corn occasionally, they can be allowed, if in the country,

to shift for themselves. Their flesh is of unrivalled delicacy, although some complain of their small size. It should be remembered that we cannot find absolute perfection, and as these fowls dress, when fattened, (which they will do nearly as well, if not better, at liberty than in a coop,) from three and a half to four pounds, that should suffice.—*Derby, in Poultry Bulletin.*

JUDGING CATTLE BY POINTS.

Cannot our Provincial Board of Agriculture get together a small committee of experienced men, with the view of framing a set of rules for the judges to go by in awarding the premiums at exhibitions. It might be tried first in one class only, say the Short-horns, and if it was found to work well and proved satisfactory, the same plan could be gradually introduced into other classes. It is always a difficult matter to obtain the most desirable men as judges in a particular class, and it must be conceded that unless really first-class judges and men of experience can be obtained, there is always more or less dissatisfaction with the awards.

In framing the rules, regard should be had to the value of each point in the particular breed to be judged upon, and by fixing a sort of arbitrary scale, the acme of each point being designated on the set of rules by a number, and graduated according to the value or desirability of the presence of that particular point, so as to make up, when all the points are complete, the highest quality incident to the breed. These certain points being specified, and numbered gradually from lowest to highest on the scale of rules, and each judge having a book into which to mark his opinion of the value of each point, the sum total of the whole, as set to the credit of each animal named in the book, would be added together, and the animal attaining the highest number of marks would be entitled to the first place, and so on.

The report would then be made up of the opinions of the different judges on each separate individual point, instead of, as now, being derived from the impression made upon the judges collectively after consultation, and interchange of opinions with each other, which in many cases results in one judge moulding the opinions of the others to his own. Exhibitors, too, would thus be better satisfied, and know on what grounds each particular animal had been approved of or rejected.—*Globe.*

SELECTING TURNIPS FOR SEED.

I notice that in the *Rural* of March 9th, a correspondent desires me to give my experience in selecting my turnip seed, for the benefit of your readers. I think your correspondent meant to say in selecting my turnips for seed, as I select and grow most of the seed I sow. My method for selecting turnips for seed is before any of the crop has been removed, to walk over the field and choose such as come up to my standard of a good turnip. First of size, medium to large, (seldom the largest,) perfect in form and true to color, (of whatever variety.) For instance, the yellow purple top Swede, which is a great favorite with my customers for winter and spring use, should be as smooth as a sheet of writing paper, and when first drawn from the ground, of a delicate cream color, almost white; and that port-

ion which grows above the surface, of a dark purple. Second, the leaf stalks should spring immediately from the body of the turnip and not from a shank or high crown, as is often the case where turnips have been crowded in growing, or as is sometimes caused by the character of the soil; for instance, a rich muck will almost invariably produce this style of turnip, if the least crowded. Third, I have regard to the grain. This is almost invariably determined by the smooth, glossy appearance of the rind. If coarse, the opposite of the above.

To secure them through the winter, I remove the top about two inches above the crown, but do not remove the roots. Pit them, and plant them as early in spring as the weather and soil will permit. But experience has taught me that good seed is but one of the pre-requisites to insure a good crop of turnips, good soil, cultivation, and a suitable season are aids that cannot be dispensed with.

D. LEATHERSCICH.

Caledonia, N. Y., in *Rural New Yorker*.

TO TRAIN A HORSE TO STAND.

The *American Stock Journal* contains the following directions:—Take your horse on the barn floor and throw a strap over his back and fasten it to his right fore foot; lead him along and say "whoa," at the same same time pull down the strap, which throws him on three feet and makes him stop suddenly. This is the best way known to teach whoa, though you can put on the war bridle, and say whoa, and give him a sharp jerk that will stop him about as soon as the strap to his foot. Then put him in harness, with the foot strap, as directed to do under the head of "training to harness," and drive him up to the door. The moment he undertakes to move, take his foot and say whoa. Get in your carriage and get out again; rattle the thills, make all the noise getting in and out you can; give him to understand, by snatching his foot each time he moves, that he must stand until you tell him to go; and after a few times you can put the whole family in the carriage and he won't stir out of his tracks.

CULTIVATE THE BEAUTIFUL.—A well kept farm with neat buildings, and a garden in which flowers and trees are more conspicuous than broken crockery and cast-off hoop-skirts, is worth more to keep or to sell than where no attempt at beautifying the premises has been made. Some years ago a gentleman of our acquaintance purchased a farm in the front yard of which, put out by a former owner, were several ornamental trees that had attained quite a growth, some flower beds shrubbery, &c. Almost one of the first acts of the new occupant was to tear away the fence, cut down the trees and turn the pretty yard into the common highway. We never pass that place but we are pained by the thought of the vandalism that has given a barren and cheerless aspect to a home that might have rejoiced in refreshing shade and a wealth of floral beauty. We counsel more attention to the beautiful. Plant trees and shrubs and vines; make your home surrounding attractive by the help of rustic structures—arbors, seats, gateways—by the artistic forming of land, and the judicious disposition of the various objects employed. Don't hope to do it all at once; and don't get discouraged. Do a little this summer and fall, and the remainder another year. A tree

grows slow, but before you are aware of it, it has outgrown your expectations. Set out trees therefore—for they will not grow where you want them if you do not put them there. How the odd hours of one summer even, can be made to improve and adorn one's home with a beauty that will never fade but be more and more delightful with each returning spring time!—*Maine Farmer*.

BULLS AMONG COWS.

A bull should never be suffered to run at large with the cows of a dairy. "But why this stringent rule?" it may be asked. Simply this: The propensities of his nature lead him to begin teasing a cow from the moment her sexual heat is discovered by him, which may be several hours before she is willing to receive him; therefore he neither feeds himself, nor permits her to feed, and as a matter of course her secretions of milk measurably cease, and what milk she does secrete becomes feverish, and when drawn affects the quality of all the milk with which it comes in contact. When the cow comes in heat, it will always be discovered either at night, or in the morning when the milkers go among them. When the milking is done, separate the affected cow from the others, and lead the bull from his stable, or yard in which he is kept, and admit him to one, and not exceeding two services to her. One effective service is as good as more. Then take back the cow to her stall, stable or small enclosure by herself alone, and it at night, let her remain until morning, or if in the morning, five or six hours; then her heat will have passed off, and she will graze, or feed quietly, and the other cows will not interrupt her. The bull, of course, will be quiet and fit for service when again needed.

It may be objected that this makes too much work. Not so. It is far less trouble than to let the bull run at large, ranging about, always in the way, wearing off his flesh for no good, besides keeping him under control. Bulls sometimes get cross, and are dangerous to passers-by when running at large, besides acquiring mischievous habits. A bull should no more be suffered to run loose among dairy cows, than a stallion should among mares, and nothing but sloth or negligence will tolerate it.

Another fact has been lately developed in dairy districts where abortions have been frequent, which is that bulls, from excessive copulation, become diseased in the generative organ from serving lately aborted cows. They take the aborting disorder in such service, and communicate it to the wombs of other healthy cows, which, when the portion gets to a certain stage of growth, proves fatal, and it is discharged in abortion, and the use of the cow for the season is lost. Therefore, a cow that has aborted should be taken from the herd, for a length of time, some weeks at least, and get into perfectly good condition before suffered with the healthy again. It may be said that this is only a theory; but it is a theory so well founded on recent experiments as to be well worth the dairyman's attention.—*L. F. Allen in Prairie Farmer*.

The *New England Farmer* states that Mr. J. N. Bagg, of West Springfield, Mass., editor of the *Ayrshire Herd Book*, is about to prepare another volume of that valuable work. It will be issued in the latter part of this year, and breeders of Ayrshire stock are invited to forward pedigrees, etc.

FISH CULTURE IN ONTARIO.

Within a mile of the town of Newcastle Ontario, Mr. Wilmot owns a thousand acres or so of land, through which flows a clear pebbly bottomed creek, fed by springs on his estate and adjacent lands. His father, many years ago, in making his purchase, had an eye to the numerous salmon which in autumn ascended the little stream from the lake, some two or three miles distant. In those days all the rivers on both sides of Lake Ontario were visited in the fall by these fish. With few exceptions they have been rendered salmonless by milldams, and by improvidence and cupidity. A few salmon continued to visit Mr. Wilmot's creek, he conceived the idea of restoring somewhat its former fruitfulness by artificial propagation.

Accordingly, in fall 1866, he constructed a dam, which was insurmountable to the fish. Then leading the greater part of the water from above ground, he allowed it to pass through a pool eighteen inches or two feet deep, and over the pool built a rough board house. He thought that the fish which were accustomed to pass above to spawn, on finding their passage barred would take this side channel, and, finding a grating at the head of the pool, and a quiet shady place in the reception house, would stop there and prepare their spawning beds in the gravel. He was not disappointed, but secured fifteen fish in this way.—Eleven of these were killed by some poachers who broke into the house one night. From the remaining four he procured about fifteen thousand eggs; and, placing them in perforated pans, over which flowed a gentle stream of spring water, in about seventy days most of them hatched out. The fry was cared for, for six months, and then turned into the creek below.

The Canadian Government, seeing the importance of the enterprise, with fostering care set aside this with other creeks, for the natural and artificial breeding of salmon, prohibiting all kinds of fishing in them.

1867. This fall, Mr. Wilmot, encouraged by his first success, built a new and larger reception house, the pool being thirty feet long and fifteen wide. In due time he was visited by twenty-five salmon, from which he obtained about fifty thousand eggs. But not being yet an expert in manipulation, a very large proportion of the eggs were afterwards found not to be fecundated.

1868. A thousand dollars were appropriated this year by the Dominion to further the undertaking. A portion of a creek near Grafton was also utilized to some extent, and the ova obtained transferred to Mr. Wilmot's hatching house. The experiment was made this fall of hatching the eggs in the water of the creek, which in the winter is scarcely above the freezing point. The water of the spring which was used previously is of nearly an even temperature of 44 degrees. Mr. Wilmot's argument in favor of creek or river water for hatching is stated in the following extract from a letter to the present writer.

"I would like you or any of your friends, to see my rough mode of breeding salmon; that is in using the natural creek water instead of the pure clear spring water so much advocated by your American fish culturists. I have produced as much as ninety per cent. in this way. In many cases the average will run below, say fifty per cent. Give me river water with filtration (although I do not filter

mine). The consequence of using *spring water* is, that it will hurry out the young fish in January, and you have to resort to artificial feeding until May. With *river water* the eggs do not hatch until April; so the fry, when they begin to feed, will get the natural food in the ponds. And the water, being warmer than that of the spring at a particular state of their growth, is more favorable."

Mr. Wilmot's plan has the merit of providing the same conditions which the fry find naturally in the creek or river, and I think our Fish Commissioners will find it, after some experience, preferable to the present mode of using spring water. It is certainly in accordance with the practice at Stormontfield on the Tay.

The fry now alive, produced by the hatching of the winter of 1868-9, are estimated at 100,000. These will be turned into the creek in a few weeks, and in due time find their way to the feeding grounds in the lake.

Among the piscine visitors that entered Mr. Wilmot's reception house in the fall of 1868, were 150 grilse—part of the produce of his first year's (1866) hatching. Besides these he was visited by thirty mature salmon, some of them weighing thirteen pounds, which is a third less than they would have weighed when in full condition in the early part of the summer. From these he obtained 150,000 eggs, which produced the 100,000 fry alluded to in the preceding paragraph, and which fry—deducting the accustomed loss—will return in the fall of 1871 as grilse averaging three pounds, and the year after mature salmon averaging nine or ten pounds. The 150 grilse which entered the reception house, as well as many which occupied the pebbly shallows below, returned to the creek last fall (1869) mature salmon.

1869. Mr. Wilmot says, in a letter dated January 23, 1870: "I am now pleased to state that during last November I had upwards of 300 salmon and grilse in my reception house at one time, and twice as many more on the shallows extending about a mile and a half in distance in the creek below, spawning in the natural way. I have now in my hatching house about 500,000 eggs, in a large number of which the young fish is plainly visible to the naked eye."

Mr. Wilmot also says that a good many salmon were seen along the shore of the lake last fall. So it is pretty certain that over a thousand adults have come from the ova of the four salmon he commenced with in 1866, to say nothing of 100,000 fry in his ponds, and 500,000 in his hatching house.

Last summer, by consent of the Fisheries Department, Mr. Wilmot set trap nets at the mouth of his creek, and in a short time took sixty salmon. If the privilege of fishing in the same way is granted Mr. Wilmot for the coming spring and summer, he expects to take some hundreds; and that without detriment to his piscicultural establishment.—*New York Citizen*.

A WRITER in the *Southern Cultivator* gives the following as a remedy for colic in a horse:—"Give a teacupful of wheat flour in a black bottle filled with water; dissolve the flour by shaking the bottle, and drench the horse. It will generally cure in five to ten minutes." He adds that a tablespoonful of flour in a tumbler of cold water will prove an effective remedy for a man.

MORTALITY AMONGST BEES.

I am in receipt of letters from several individuals, who, having lost all their bees during last winter, express themselves as somewhat discouraged, believing themselves to be the only unfortunate ones. For the benefit of such, I would say that last season was an extraordinary one, such as we have not had for many years.

The entire season being cold and wet, bees did not lay in sufficient stores for winter use. It will be recollected that winter set in uncommonly early. It was also late in spring before bees could be brought out from their quarters and placed on their summer stands. Hence they were closely confined to the hive much longer than they generally are, requiring larger winter stores than usual, while the cold and wet season prevented their laying in even an ordinary amount. The result is, there has been a fearful loss of bees throughout the country, by far exceeding anything of the kind for years, and those few who think themselves the only unfortunate ones may console themselves with the thought—if consolation it is—that nearly all beekeepers have suffered a similar loss, many having lost their entire stock, others one-third or one-half, and nearly all losing some. I am informed of one man who went into winter quarters with one hundred stocks, and came out with only fourteen, and those in a weak condition. Others, again, with forty stocks, came out with seventeen.

Many supposed their stocks had sufficient stores, and yet they were found dead in the spring. We can only account for stocks being heavy, and yet proving short of honey, by their having gathered largely of pollen, bee-bread, and by the honey being watery, making hives weighty. It will require some time to make up the loss, and every beekeeper should renew his determination to keep only strong stocks.

The present season bids fair to be a good one. Bees are now doing well, and swarming commenced as early as usual, though the scarcity of honey consequent, to a great extent, on the dry weather about the last of May, caused the bees to kill off their drones in many localities, which will retard swarming and the breeding of queens somewhat.

J. H. THOMAS.

LIVE STOCK GLEANINGS.

To prevent a fowl flying, pull out the flight feathers of one wing. Don't use the scissors.

It is said that a piece of leather hung upon the horns and coming before the eyes will prevent an ox from jumping.

A farmer near Kalamazoo, Mich., a few days since covered his potatoes with Paris green to kill the bugs. Some of his cattle broke in during the night, and he found two dead cows in the morning.

The *Country Gentleman* contains a letter from an Oswego (N. Y.) correspondent, from which it appears that cows in that section have died this season at an astonishing rate, from some unknown cause.

The *Yenix Gazette* says that within the six months previous to the great sale of the "Oakland Herd," Mr. McMillan had sold of that celebrated family of short horns, about \$20,000 worth at private sale.

Chemistry will prove that there is more nutriment in a quart of corn meal than in a half bushel

of beets. But in practice, two quarts of meal fed with a half bushel of roots will make more meat than four quarts of meal.

A herd of Alderney cattle were recently sold near Philadelphia, bringing good prices. Eleven cows and heifers, each in calf, were sold at an average of about \$310 each, the highest price being \$450 and the lowest \$150.

A correspondent of the *Rural New Yorker* says he can make fifty pounds more butter from a cow, during the season, by churning the milk than by churning the cream only.

Eggs may be canned in their own shells, and will keep fresh for months by two or three times pouring scalding water over them and immediately turning it off; and then packing them in salt with the apex downward.

The *Rural World* suggests that instead of tying up a tired horse in a narrow cell with a plank floor to stand on, it would be more kind, if not more profitable to give him his head and a chance to stretch his limbs in an open lot, or at least in a space twelve feet square.

No class of suffering brutes are more to be commiserated than horses during the time of flies. Any reasonable preventive should be used. The following is recommended: A gallon of water in which two handfuls of walnut leaves have laid over night, and in which they have been boiled for a quarter of an hour the next morning, is the preparation. With a sponge apply the fluid to the parts of the horse most exposed.

The sheep fever has somewhat abated, according to the report of a correspondent of the *Chicago Evening Post*. He has seen and admired the splendid houses and farms of the Hammonds, who stood at the head of the merino sheep trade in Vermont. Their occupation is gone, people do not seem to care any more for fine woolled sheep than for a fine haired pig. He has not heard a Vermonter say Sheep, of his own accord, since he entered the State.

N. B., of Lee county, says in *Prærie Farmer*:—"I have seen a great many dead horses hauled out for the dogs to eat, but never saw but one in Illinois that had been skinned, and that was mine. I lost a colt and a mule; I skinned them and dressed their hides with the hair on, and would not give the mule skin for any buffalo robe of the same size I have seen. The hide of a colt that has run out all winter has a thick heavy coat of fine hair on it, and, if well tanned, makes a good robe. Buffalo robes are becoming scarce, and the time is not far distant when something must be substituted."

The savans of the N. Y. American Institute Farmers Club, have discussed the King bird, and came to the conclusion that he does not destroy bees. A correspondent of the *New England Farmer* says that the doubts this decision and recently watched a King bird flying about a swarm of bees. His observations convinced him that the bird was there for the very purpose of catching the workers as they returned to the hive, loaded with honey, and also that he was succeeding at the business very finely. A few days since a neighbor shot a King bird which was flitting about among his swarms, and upon dissecting him, found ten of the bees in his stomach. Now, if King birds don't eat bees, how came bees there?

The Garden.

THE FUCHSIA.

The Fuchsia is one of the most elegant plants now under cultivation. It is a favorite everywhere, whether as a greenhouse, parlour or bedding plant. It is easily cultivated, and will in a very short space of time, reward any pains that are bestowed on it with a rich profusion of the most graceful blossoms. The plants are easily raised from cuttings placed in a mixture of mould and sand, in the proportion of one-third sand and two-thirds mould. They should be placed in small pots at first, and shifted as soon as the roots begin to touch the sides of the pots into good rich mould, mixed with a little sand and well-rotted manure. The roots must never be allowed to become dry. This gives the plant such a check that it is with difficulty that its former strength is recovered. They should be sprinkled freely with water, especially when the growth is rapid. Twice a day is not too often in warm dry weather. It takes a little time, but not so much as it would to remove the insects from the leaves if once allowed to take possession. In summer time they should be shaded after nine or ten o'clock in the morning, but in the winter they should have the full benefit of the sun all day. Fuchsias often succeed well planted in the garden through the summer months, but this requires a partially shaded spot sheltered from rough winds and storms, for where this precaution is not taken the plants only prove a source of anxiety and vexation to the cultivator. They must be taken up before the frost comes in the autumn. In doing this, great mistakes are made. When the plants are in all their beauty of leaf and bloom, it is only natural that we should desire to keep them in this condition; but this can seldom be done, for if they are potted with the greatest care and removed to the house, the leaves will soon drop off leaving nothing but the bare stalks. In taking up the plants then, a considerable portion of the branches should be cut away. This induces the roots to strike out afresh, and new branches to form, and thus the plants are saved. In cases where the pots have been plunged to the rim in garden-beds through the summer months, they may be removed to the house in all their bloom, without injury. As a general thing Fuchsias require a rest some part of the year. Those desired to bloom in winter should be rested in summer by being placed in a shaded or partially darkened situation, and kept on a limited supply of water. When winter is their season of rest, the cellar is the proper place for them, being cool and without danger of frost. Here also, water should be applied very sparingly. In order to have the plants in a vigorous condition in sum-

mer, they should be gradually brought to the light and heat about the last of February or the beginning of March, watered more plentifully as they may require, and where it is necessary re-potted in fresh soil.

Fuchsias may be trained in various attractive shapes. Some varieties will naturally grow into a miniature tree; others may be trained in a fan-form, or fastened to a single stick concealed among the foliage and then allowed to droop on all sides like a weeping willow. Whatever mode is adopted, it should never be done so firm and stiff as to destroy the graceful appearance of the plant. Varieties are very numerous, and all are so beautiful that it is almost invidious to recommend any particular one above another. In making a selection, both the light and dark-flowered, also, both the single and double varieties should be chosen, as the effect will be far more pleasing when in bloom, from the contrast of hues and forms thereby secured.

THINNING OUT FRUIT.

One of the most neglected of all horticultural operations is that of thinning out the fruit after it has set. Few persons except professional gardeners have a nerve to take off one half or two-thirds of a crop of fruit; the sight of a large crop so appeals to the selfish covetousness of our natures, that scarcely any statement or argument will convince us that if we throw away one third, one half, or even more, in some cases, of a crop of fruit, we shall have the same weight of fruit, much higher flavored and in all respects superior to that which we should have had if we left the whole to nature. Yet such is really the case, and by so doing we also prevent an exhaustion of the vital energies of the tree, and enable it to bear good crops every year, instead of biennially, as is generally the case.

A universal law of nature, in both the animal and vegetable kingdoms, is that of exhaustion of vital force or energy in reproduction; and in accordance with this law, we find that the more seeds the plant produces, the sooner its decay and death ensues. By preventing the formation of seeds by destroying the organs of reproduction in the flower, we can make the flower last a much longer time; thus among orchids, when bloomed in hot-houses, where the proper insects are not present to assist in fertilization of their curiously constructed flowers, the flowers will retain their beauty for weeks, but if fertilization is effected, then the colors fade, and the flower collapses within a few hours; so also, if the stigma of the flower of the Night-Blooming Cereus is removed, the flower will remain open during the day after the night it was bloomed; if not removed the flower will close up and fade away by sunrise. By not permitting annuals to go to seed, we can prolong their existence for two or more years. When, therefore, we take off any proportion of a crop of fruit, we thus in the same proportion save the vital energies of the tree, by not requiring their expenditure in the production of seeds; but few of which, except in the way of various nuts, are used for domestic purposes—pulpy fruits comprising the great majority of fruits so used.

The fruit is only a modified form or altered state of the leaf, and its physiological action in its earlier stages of growth resembles that of the leaf; but in the case of pulpy fruit, this resemblance ceases after it has attained to a certain maturity. In this early stage its structure and chemical constitution are essentially the same as that of the leaf, and the fruit is tasteless or nearly so; In the next stage of development, it has the power of forming from the juices or sap furnished by the leaves the various acids peculiar to their species—such as tartaric, malic, and citric acids; in the third stage, or that of maturation, these acids become naturalized by alkalis present in the fruit, and are to a greater or less extent decomposed, and saccharine matter formed from them. The cellulose or starchy plates which form the walls of the cells of the fruit are also decomposed and transformed into sugar; and the various flavoring oils and ethers which give the various distinguishing flavors to fruits are then also formed.

Now, the fruit, in common with the leaf, derives the principal part of its food and nourishment from the surrounding parts of the tree or plant, and this nutriment is drawn up by the leaves from the roots; it therefore follows that the less of it that is required for the production of starch or albuminous matter for the seed proper, the more will be at liberty to be appropriated to the pulpy envelopes of the seed, in the form of starch and similar matters, capable of being transformed into sugar by the chemical changes which takes place in the fruit; and it is this saccharine, pulpy mass to which we wish to give as large a development as possible, in order to fit it for our nourishment and refreshment; and this is mainly done by thinning out the fruit.

It is by means of thinning out the grapes in a bunch that the splendid berries, as large as plumbs, which we see at our horticultural exhibitions, are obtained. By manuring, pruning, and other operations, we may produce fertility, but in order to produce fruit of the finest quality, and, at the same time, preserve the fruit-bearing qualities of our trees, we must also practice liberal thinning. It is by the judicious application of the other operations with this, that some English gardeners have been able to produce as many pounds of fruit upon a vine as there were pounds of earth in the pot in which it grew.

The best period in the growth of fruit, at which to perform this operation is at the commencement of the second stage, when the fruit begins to acid, and the seeds begin to harden. In the case of fruit growing in bunches, as grapes, it is not absolutely necessary to thin out each bunch—the removal of the proper number of bunches will answer nearly as well. What may be the proper or necessary amount of fruit to remove depends upon the age and condition of the tree; in ordinary fruitful years, one third may be removed with benefit and profit, and if the tree is very young, one half, and in some cases two thirds, could be taken off without incurring any actual loss.—*Hearth and Home.*

CURRENTS ON LIGHT SOIL.

As a general thing, currants do not succeed on light sandy soils. They may grow luxuriantly in the early part of the season, but when the fruit begins to ripen, the leaves drop and the fruit soon follows.

In the Middle and Southern States, this burning or premature ripening of the leaves and fruit is more common than farther North, but in a warm, dry season, it may be seen almost anywhere upon light soils. We have experienced difficulties of this nature, but found a remedy in the free use of the mulch. All the old leaves, weeds, coarse manure, and similar material are thrown upon our currant-beds, and the result of this treatment is very satisfactory. The soil upon which our specimen currants are planted is a light sandy one, but it is kept constantly covered, and our numerous varieties of this fruit grows exceedingly vigorous, and the fruit hangs on late and does not drop until fully mature. We have gooseberries treated in the same manner, and there is no sign of mildew upon either leaves or fruit, while other plants not mulched are already badly affected.

Currants and gooseberries require a cool soil, and we do not know of a cheaper or better method of securing it than by the free use of mulch. The entire surface of the soil should be covered, and no handful just about the stems will answer. A liberal use of mulch will not only keep the soil cool and moist, but affect the temperature of the atmosphere in the immediate vicinity of the plants, and prevent premature ripening. Our hot, dry climate is not so well suited to the currant as a cool one, but we make up for natural disadvantages by artificial means.—*Hearth and Home.*

GARDEN GLEANINGS.

If you would kill weeds never allow them to breathe through their leaves, and thus their roots will die.

The effect of drouth in the garden is best prevented by frequently stirring the soil.

"PARIS GREEN" is probably the best agent for the destruction of potato bugs yet discovered. Punch holes in an oyster can and sprinkle over the plants when the dew is on. Keep on the windward side, for the powder is a poison. Mingle it with ashes or flower and it will adhere better.

ONE naturally shrinks from a free use of the pruning knife among the branches of a fruit-bearing tree; and much less is one inclined to strip off redundant blossoms or pluck newly-formed fruit; but the best horticulturists strongly recommend it. Doubtless it is better to have a smaller number of finely developed pears or peaches than three times the number of inferior fruit.

MANY persons become so much affected with nervousness, that the least annoyance greatly agitates them, and when they stretch out their hands they shake like aspen leaves on windy days. By a daily moderate use of the blanched stocks of celery as a salad, they may become as strong and steady in limbs as other persons. Every one engaged in labor weakening to the nerves, or afflicted with palpitation of the heart, should use celery daily in season, and onions in its stead when not in season.

No plant requires closer pruning than the rose; the best blossoms are always found upon the stocks which shoot fresh from the roots. If the branches are cut off one half, the buds will be much more numerous. By all means plant them in the open ground and manure them thickly. All window-

plants should be changed in position at least once, and oftentimes twice a week. Give all the sunlight the windows afford—the more plants receive the more rapid their growth, and the more numerous the flowers.

A CORRESPONDENT of the *N. E. Farmer*, says:—I saw in your last paper an inquiry by some one as to what he should do to keep borers out of his trees. Two years ago in looking over my trees in the fall, I found borers in all of them but one. Noticing a tomato plant by the side of that tree, I thought that perhaps the smell of the plant might be the reason. Last year I tried it, and found none where I had tomato plants. Speaking to a neighbor about it, he said he was never troubled with borers, but he had always had tomatoes by the side of the trees. I shall try it this year, setting the plant as near the trunk of the tree as possible. Give it a trial, all of you who are troubled with borers.

THE Cassaba is a melon introduced by the Department of Agriculture and not generally known. A correspondent of the Department, writing from Chico, California, in relation to his experiments with seeds, states that, "several varieties of the Cantaloupe seed produced melons which the world cannot surpass—the Japan white Cantaloupe, the Cassaba Cantaloupe, and the Pinney's early water-melon being particularly fine. The Cassaba imported from Smyrna, produced the finest melons ever grown on this continent, being far superior to the choice Hunter melon, as the latter is to the common musk-melon. The whole appropriation made by Congress for your departments is repaid by the introduction of this one excellent variety of melon."

THE *London Gardener's Chronicle* has the following concerning a new melon:—"This extraordinary melon was raised during the summer of 1869, at Pontypool Park, by Mr. PATENSON, gardener to Mr. HANBURY LEIGH; it weighed twenty-four pounds, and measured forty-two inches in circumference. It was raised from the Netted Scarlet flesh, crossed with the Black Rock. The fruit is of exquisite flavor, and very handsome, with fine rich scarlet flesh, and, as seen by the dimensions given, of extraordinary size and weight. It produced one hundred and sixty-nine seeds, which is all the stock of it." Why do not some of our gardeners produce an extraordinary melon by hybridizing?

A CORRESPONDENT of the *California Farmer* makes the following excellent suggestion:—"I do not see how any one who has ever noticed the delicate foliage and flowers of the cranberry, even when wild and uncultivated, could fail to be struck with its beauty. But my object now is to call the attention of your readers to its value when cultivated in pots in the house, or, still better, in hanging baskets. When thus grown, the long slender stems, drooping from the basket, together with the rich fruit, form a most beautiful object. Let those who mourn that they cannot afford to purchase foreign novelties, make a rustic basket, and put a few cranberry plants in it, and hang it in the window, and they will say they never saw anything more beautiful."

STRAWBERRY plants can now be set out from the middle of August to the end of September. It is true August is generally a very warm and very dry month, but in case of the absence of rain, the new-planted beds must be watered every day or two until they become established. The bed should

not be in a damp situation, or the soil heavy. Dig deep, pulverize finely, and apply a pretty heavy dose of good barnyard manure. Let the divisions be about three and a half feet in width and as long as may be desirable. Set the plants about eighteen inches apart, insert them in the ground firmly but not too deeply, and then keep clear of all grass and weeds. The last of November protect the plants with a light covering of straw the first year, after that if needed light manure may be substituted as a covering. A half a crop may be expected the first year. A mulch of straw cut two or three inches long will keep the ground moist and cool, which this berry likes, and smother the weeds. This should be applied the first part of April. An application of spent tan is also excellent.

BALSAMS are greatly improved by pinching off the lateral shoots and allowing only three stalks to grow; or only the center stalk may be left, and all the force of the plant be thrown into it, producing an upright stem loaded with gorgeous chalicees of bloom. This stem, with a proper enrichment of the soil, will grow over two feet in height. They are beautiful plants for in-door blooming. Plant one in a good sized pot with a large proportion of stable manure at the bottom of the pot; pinch off all side shoots and tie to a stake. This annual has greatly increased in beauty under the successful hybridization of the French, German and English florists. Smith's Prize are as double as carnations, and as perfectly striped. The Solferino Balsam was a last year's novelty of perfect coloring, and densely double flowers; so rare was it considered that a packet of five seeds cost fifty cents. No class of annuals pays better for cultivation than the Balsams.

A WRITER in the *Rural World* states that "some farmers make it a regular practice for a succession of years to throw caustic lime around their apple trees in the Spring and Summer. We once noticed that a tree standing in the immediate vicinity of our dwelling had all at once put forth with renewed energy, and we were at a loss for some time to define the cause. On examination, we found that a quantity of lime, which had accidentally been spilled and rendered worthless by becoming mixed with the refuse on the stable floor, had been thrown at the foot and around the tree, and to this, as the principal cause, we immediately accredited the revivescence and renewed fructification of the tree. Taking the hint from the incident, we purchased 12 casks of lime, and applied half a bushel to each of the trees in our orchard, and found that it produced immediate beneficial effects. Not the health of the tree only, but the quantity of the fruit also, was greatly improved. This application will be especially beneficial in soils where there is a redundancy of vegetable matter. We would advise our farmers to make a trial of this experiment."

ZINNIAS make much finer growth if the laterals are pruned off; indeed all plants require the instrument, and their beauty is injured if they are allowed to wander at their own sweet will. All single flowering plants should be uprooted as soon as their character is known, the first flower does not always determine that, however—often when the first blooms are imperfect, the next one will show the desired perfectness of shape. The Zinnia was so named by LINNEUS in honor of Dr. ZINN, the pupil and successor of HALLER, at Cottingen. Its brilliant

coloring was an acquisition to floriculture twenty-years ago; but cultivation had one wonder for the coarse, rough flower, and made it a rival for the Dahila, superseding it in the affections of many amateur florists. The flower is not only desirable for its exquisite tints, but also for its continuity of bloom. A perfect blossom will retain its beauty for six weeks upon its stem, and for cut flowers, bouquets, vases, etc., it is unequalled for use as a back ground or centre piece; but it lacks the fragrance so essential to completeness in flowers, and can never take its place in the front ranks of Flora's Kingdom.

VINES ON THE HOUSE.—The fear that the paint will suffer from vines clambering over the house is a miserable reason for keeping the house bare of all such pleasant adornments. What if it does? What if a home rots down in a hundred and forty nine years instead of lasting a hundred and fifty because of them? Let us wreath our homes in vines. Says the *American Builder*:

The expression which, of all others, it is most desirable to secure in the aspect of residences in the suburbs and country especially, is that of repose and settled domestic comfort. However imposing may be the architectural design, or however elaborate the artistic decorations of a building which is to be occupied as a dwelling, its appearance is of necessity cheerless, if not actually forbidding, until it is mel- lowed, softened and subdued by the genial touch and presence of nature. The edifice can in no way be made to receive this effect so easily and fully as by wreathing it with vines, and suffering its outlines and ornaments to be seen through the delicate foliage and brilliant flowers, which serve to soften down the angular formality of mere stone or brick. Their effect in heightening the charms of the humblest and plainest abodes is equally striking. Of the vines adapted to such use, the wistaria, the trumpet creeper, and the American ivy, are the best three that can be named. Unfortunately, we have no evergreen vine which will bear our climate, and give to our buildings in winter the warm and cheerful look which, farther south, is available by the English ivy; but as an offset, we have more gorgeous beauty of flower and foliage than that vine ever displays.

The wistaria is a perfectly hardy vine, and grows with rapidity, after getting well started in rich soil. Its foliage is delicate and beautiful, and the flowers hang in rich purple clusters like grapes. It blossoms twice in a season, and in great profusion. This vine, like others named, may be had at any good nursery, and, once planted in good soil, requires no more care than the most common tree. The trumpet creeper is much like it in its general character, but has trumpet shaped flowers, three or four inches in length, which gives it a gorgeous look and if mingled with those of the wistaria, by planting the two vines so that they may twist and twine together—the effect is very fine.

The American ivy, known also as the Virginia creeper, has a very beautiful foliage, the leaves growing five together from a single stem. It is a very rapid climber, running ten or twelve feet in a season, if planted in rich soil, and sending off long branches which sway gracefully in the breeze, or attach themselves to adjacent points, and form rich festoons. The appearance of the vine through-

out the summer is beautiful, and in the autumn its foliage assumes the most brilliant hues as if to make its exit in a blaze of glory.

TREE PRUNING.—The *Journal of Horticulture* remarks:

Set a green hand to prune trees, where limbs of any size are to be removed, and the chances are ten to one, that he will commence at the top, and saw through the limb until it falls by its own weight; tearing down the bark and wood, inflicting a great ugly wound, which may require years to heal, and which if not carefully protected from the weather, will cause such decay as to destroy the tree. The method commonly recommended to prevent such injury is to begin at the bottom, and cut half-way through, and then finish from the top, or with very large limbs to have them supported by a crotched pole or pitch-fork, held by an assistant below; but we have found a better plan and quite as easy to be, to make two cuts, the first at a convenient distance, say a foot from the point where we wish the limb removed. This short stump can, except in the case of very large limbs, be easily held in one hand, while the final cut is made with the other.

After a large limb is sawed off the surface should be pared smooth; and for this purpose, we have found a common carpenter's chisel, about two inches wide, much more convenient than a pruning knife. To prevent decay there is nothing better than one or two coats of good oil paint; and it should be as near the color of the bark as possible, so as not to disfigure the tree. All tools used in pruning should be of the best quality and kept as sharp as possible. It is poor economy to use any other.

Limbs are sometimes cut too close, but for every such one, there are a hundred not cut close enough. Every cut, large or small, should be made smooth, clean, workman-like manner; a poor workman is soon known by hacking off a limb with a dull knife, leaving as many facets as on a multiplying glass.

THE TROPEOLUM TRICOLORUM.

This is by no means a new plant, although seldom met with in collections at the present time. It is, however, quite easily grown in a cool greenhouse, and when in flower a very attractive object. Unlike the ordinary tropæolums of the gardens, this plant is tuberous rooted, with shoots of the most delicate growth. It commences to start into growth naturally in the fall, when is the time to pot. A small bulb will find plenty of sustenance in a six-inch pot, while a large one may take a seven or eight-inch pot.

Owing to its very delicate stems, a frame is absolutely necessary to train them on. Some take a balloon frame, but an umbrella shape fancy may dictate. Usually these frames are made of wire work, but even a few spray sticks can be made to answer. The frame should be fastened to the pot at the time the bulb is planted; then as the growth proceeds a very little direction to the growing shoots suffice, as the leaf stems have the power to clasp by a turt of the stem anything that comes in its way.

Care should always be taken to fill the bottom of the frame first, as the top is pretty sure to be filled afterwards.

Only light watering will be required during winter, and the plants kept in the coolest part of the green house, bus as near the glass as possible. Towards the end of February the flowers will begin to show themselves, until the whole frame will be covered with a profusion of its singular colored and shaped flowers.

Many can hardly believe so large a plant as we sometimes have grown in our greenhouse can all proceed from a stem hardly larger than a good sized pin.

The colors of the flowers are orange, red, and purple. Like most of the tuberous rooted kinds, this plant is a native of South America.

Its duration of flowering is about two months, after which the plant gradually dies away, and rests during the summer months. It does not seed freely in greenhouse culture, except, perhaps, by the aid of artificial impregnation, but propagates itself sparingly by an increase of tubers.

A very good way is to lay the shoots under the soil for a few inches in length when potting. By this means we have raised several small tubers along the stem.

The plants is too delicate for window culture. *Prairie Farmer.*

Our Country.

REPORT OF THE COMMISSIONER OF AGRICULTURE AND ARTS FOR THE PROVINCE OF ONTARIO, FOR 1869.

(Printed by Order of the Legislative Assembly.)

(2ND NOTICE.)

We continue in this issue, the review of Reports of Agricultural and Horticultural Societies, and quotations from them, to which considerable space was given in our last.

The subjoined extracts from the Blenheim report deserve attention:—

"It is a very pleasing feature to observe that the young animals which now carry off the best prizes, are from imported stock. The owners of such would not have caused their stock to have travelled this township, had it not been for the indefatigable energy of your Committee to keep up a Spring Fair, thereby compelling the successful competitors to have their stallions serve in this Township."

"The grain department, as usual, was well represented, especially fall wheat, which has well repaid the farmer for the labour and capital invested; and your Committee firmly believe that if our farmers would only adopt a more thorough system of rotation of crops, we might again occupy the proud position of being the greatest wheat-growing township in the Dominion."

East Terra remarks:—

"Root culture is now generally recognized as an essential element in good farming. It is a prime necessity in stock rising and dairy farming, and is also highly conducive to prolific crops of our ordinary cereals. Every possible encouragement therefore should be given to root culture. We would

have liked, had the competitors for these prizes, as well as for the ordinary prizes in the field-root competition, been more numerous. That they were not so may be traced to the season being unfavorable to the growth of roots. It is worthy of notice here, however, that notwithstanding the summer's draught the yield per acre of the successful competitors was very good. This raises the interesting question—How was it that under the same disadvantageous circumstances of dry weather, root culture was successful with one and not with another? Was it owing to the date of sowing? or to the time of manuring? or to the system of cultivation? A comparison of facts on these and other points might lead to a solution of the question, and future avoidance of the causes of failure."

"It is worthy of notice here that the prizes for thorough-bred cattle were more distributed than in years past. This shows that the importance of improving the breed of our stock, by the introduction of short-horn blood, is becoming more widely felt among us. May this feeling spread still more widely, and if wealth, spirit and enterprise, are not possessed in sufficient degree by all to lead them to seek to own one or more of this class of animals, let all avail themselves of the use of them when brought within their reach. In dairy produce, the exhibition was highly creditable to the township. There were about 30 entries in this class. Last year, we claimed for East Zorra the title of the Banner Township in the County of Oxford as regards cheese manufacture; and this year, having again entered the lists, we are gratified in that we still retain our laurels, and lead the van—the cheese manufactured at the factory of the late Wm. Walton, Esq., having been awarded the first prize, though opposed by the parent and famed dairies of the Scotch Riding. In the report of last year, the Directors took occasion to recommend, even in the face of low prices, the continued prosecution, within reasonable limits, of cheese manufacture. They would again urge its claims on the attention of East Zorra farmers. It leads to a system of husbandry which Canadian farmers loudly call for, viz: the cultivation of pasture grasses and other green crops, and a more liberal distribution of manure. No doubt, the pursuit of this branch of farming is incompatible with the extensive raising of stock. Calves with a lean and hungry look, called in this section of the country "factory calves," may be the result of *cheesing* them out of their milk; yet notwithstanding this, its advantages exceed its disadvantages. The most remarkable feature in this year's exhibition was the large display of farm produce. In this class there were 107 entries as against 57 last year. This shows that, despite the parching heat and the premature ripening of the crops, samples of grain worthy of exhibition were raised among us. It is perhaps not out of place here to congratulate the farming community on the favorable state of the grain market, were it for no other purpose than to give another exception to the general rule, that farmers are everlasting grumblers. That farmers have for some time back been realizing good prices for their produce is matter of notoriety, there is no denying it. But say our merchants, who with fussy impatience wait to bleed

us: "Our trade is not correspondingly brisk. What are farmers doing with their plethora of cash?" Perhaps some of them are with prudent forethought, laying up for a "rainy day," some are no doubt devoting it to the redemption of their land, from the galling shackles of a mortgage. Others are with it improving their out-buildings, and not a few are being enabled to come out of the state chrysalis "the log hut," to the state perfect, the neat brick or stone cottage."

SOUTH OXFORD remarks:

"Cheese manufacturing is a leading branch of industry in the county of Oxford. The quantity produced this season is in advance of the year 1867, and the price per pound about $1\frac{1}{2}$ c. higher, or about 16 per cent. more, and cheese shipped earlier.

"There seems to be an idea prevalent with many of our dairymen that any kind of stock or cows will answer the purpose of a dairy, milk being the only object, apparently, and in the herds of these dairymen many inferior animals are to be seen; certainly it answers a purpose when first starting the business, as less capital would get the required number of cows, but the results do not show profits. Where a number of cows are kept from year to year, some become useless from varied causes, and in such cases cannot be turned to profitable account. I do not contend that our dairy herds should be composed of thorough bred stock, but I do think that if the object were to get cows from three parts to thorough bred Durham, or crosses of Durham and Ayrshire, the profits from the dairy would be much greater, the milk as great, if not considerably greater, in quantity, and in quality much richer, whilst the animals, in case of failure in milk, could be sold almost any time (if cared for as they should be) at remunerating prices. Considerable attention should be given yearly to the improvement of the stock of cows, by careful selections, and more particularly careful crossing, and a few years only need pass before a very marked difference would be observable in the profits from the same number of cows. Some of our farmers have been awake to this, and now have from 20 to 50 cows, all well bred and kept in a condition ready for the butcher at any time."

The Report of the WEST PETERBOROUGH SOCIETY contains some excellent and opportune observations which the farming community would do well to ponder:

"Agriculture is the earliest, the most necessary and interesting of all the industrial pursuits. Earliest, because it is coeval with the race; most necessary, because poor and rich, yea the King himself, lives of the field. And it would be difficult to designate a calling more interesting. Watching the first bursting of the tender blade daily, through the weeks of the first vigour of springtide, observing the grass or the grain clothing the fields with the coming harvest, speedily noticing such rich reward of labour in the yellowing of the fields for the reaping, gathering in, till peace and plenty reign in full, generous, and thankful hearts. Or to view agriculture in its other department, viz.—the rearing or improvement of stock, there is much here, too, to interest and profit.

"But agriculture may rightfully claim rank, and ought to be viewed as a science, as well as a healthful and interesting pursuit. It is a science in the

strictest sense of the word. And while laws of thought, the starry heavens, and the deep places of the earth, have each their tutelar students, it has been found, and the knowledge is increasing with delightful proportions, that cereal growth, the nature and capabilities of soils, are as strictly under established laws as any of the systems above named. To popularize these laws of the science of agriculture, and to create a vigorous advancement in the vocations of the field, Agricultural Societies are calculated to be of immense advantage, especially in the gradation in which we have them now-a-days. The advantages are so evident that the least observant cannot fail, at least, to notice them. Competition is excited; the opportunities afforded of conference on the general questions of farming, the exhibition of implements, and the exchanges in cereals and animals. These and such like are certain to affect very materially the ways and facilities of agriculture. It is greatly to be regretted that so many, who are deeply interested in all these things, show such indifference regarding direct co-operation in the agencies referred to. It is scarcely creditable that considerable difficulty is yearly experienced in procuring such a list of subscribers as to insure the Government Grant. And when it is considered how low the fee is, it is marvellous that our farming community, involved as they are in all that pertains to agricultural improvements, should be so laggard in their interest herein. The subscription list last year was only 50 at first, barely enough for Government requirements. The Committee judged it well, in order to enforce earlier payment, that none should be received as members after the 15th September, unless on payment of \$1 50."

The report of the County of Russell Society shows a hopeful tone.—

"The most superficial observer must perceive the steady and onward progress the county is making from year to year in buildings, fences, general cultivation, and the improvement of stock and implements of husbandry."

"The extreme heat and drought of the past season, has within the recollection of the oldest inhabitant, been without a precedent, a circumstance that made the farmers' prospects very gloomy at the time the crop inspectors were making their tour through the county, but, happily, these gloomy anticipations were but partially realized. Sudden changes should teach the intelligent farmer to pursue the most approved systems of cultivation compatible with his means, and the most judicious system of rotation of crops, and to keep himself clear of despondency he has only to place implicit reliance on the Word of Him who said, "Seed time and harvest shall not fail."

"The display of horses, horned cattle and sheep, was decidedly in advance of previous years. Among others who exhibited good stock, we must make special mention of Stephen Tucker, Esq., of Clarence, who traveled so far with his beautiful young horses and bulls, without the expectation of any pecuniary gains; there could be none, our prizes are so small, consequently Mr. Tucker must have been actuated solely by a desire to let the farmers of the County of Russell see and comprehend that 'gentle' blood, whether in the veins of a gentleman or of a 'gentle' horse, has been purified by many generations of good breeding. 'Blood will tell,' and for this reason

all its elements deserve the closest study of every farmer, and of every person, no matter what may be his or her condition or pursuit in life."

North Simcoe report speaks favorably of the steady and general improvement of that riding:—

"The price of labor for the past year has been exceedingly high, so much so as to curtail improvements by clearing, draining, &c., which, together with the lumbering operations carried on during the winter, are inducements to the immigrant above many other counties, as affording constant employment throughout the year."

The *Toronto Electoral Division Society* presented an elaborate and encouraging report, particularly on Fruit culture, which concludes with the following useful suggestion:—

"Your Directors would suggest that, in future, exhibitors should hand in to the Secretary of the Society, at each Exhibition, a detailed list of the varieties which they exhibit. Such lists would be valuable to the Society, and a great service in making up the Annual Reports. To ensure this, printed forms should be mailed to, or furnished each exhibitor, who should be required to return to the Secretary such list, for entry in the Society's books, not later than the day prior to the commencement of the respective Exhibitions. This mode, if carried out, would save much labor, and prevent confusion on the day of Exhibition, as competitors would then receive tickets to attach to their articles when placing them on the tables, and the Judges would be able to complete their duties at least two hours earlier than has been the practice for some seasons past."

"The Society possesses some good standard books, and are regularly receiving some of the best British and American periodicals, on gardening and kindred subjects. These works are available to the members for circulation."

The Township of *Fenelon*, North Victoria, remarks in their report:—

"We also find this year, the winter wheat on old land the best on light soil, if well cultivated, having plenty of straw, and heads better filled than on heavy clay soil. Although a smaller sample than usual, the berry is plump, and will yield on an average, about 20 bushel per acre, or 64,000 bushels, there being about 3,200 acres this year in this township, chiefly Soules variety. A few kinds of midge proof, of which the Treadwell appears best, being a few days earlier in ripening than Soules, also longer in the straw, and is well fitted for light land, and stands up, which is not the case with some other kinds of midge proof, which makes them tedious to harvest. It is also partly bearded and partly bald."

The report of the *Muskoka Society* is truly encouraging, clearly indicating the great resources of that new district and the energy of its scattered settlers:—

"The cry that no good thing could come out of Muskoka seemed to have affected many of the settlers, who were slow to believe that such an organization was possible. Nothing daunted, however, the proposers of the organization called a meeting of the settlers, which was held at Bracebridge, our young centre. The meeting was more numerously

attended than could have been anticipated, and resulted in a list of fifty-nine members, at one dollar each. In due course office bearers were appointed, and the proper steps taken to obtain its legal recognition. The show was quite a success."

The *South Victoria* report, after referring to the agricultural progress this riding is making and the success which is beginning to attend the judicious cultivation of fruit, concludes:—

"Some of your Directors have made it a point during the past year to collect information as to what extent a better system of farming was being practiced over that which so generally prevailed up to a very recent period, and we learn from the report of these members of your Board of Directors who have sought this information, they find throughout the county that there is considerable progress making in the way of draining, and in adopting a system of rotation crops, without which, we are convinced, farming operations cannot be carried on successfully."

"We have recently been led to see, through the Press, that our Government have a scheme under consideration for draining the swamp lands of the Province, and thus rendering them, as they probably would be, the most valuable land we possess, and in a sanitary point of view, the benefit would be almost incalculable; we beg to express our hope that this subject will not be allowed to drop by our representatives in Parliament, but that, ere long, some feasible plan will be devised for carrying out such a grand national project."

We earnestly request the best attention of the reader to the following extract from the Report of *South Waterloo*:

"Your Directors have pleasure in congratulating the members of the Society on the increased interest taken in introducing and raising thorough-bred stock, as evidenced by the number and quality of the stock exhibited at the spring Show. The members have every reason to feel eminently satisfied with the evident signs of progress exhibited in this respect. This progress in cattle breeding is now of great interest to farmers. As a means of revenue, they must now turn their attention to cattle raising. The doubtful return from their crops, affected as they are by many causes, renders it desirable that they should turn their attention to a source of revenue which, while not affected by those causes, offers a sure income, and a means of recuperating their, in many instances, exhausted land. The establishment of our cattle markets has been of great benefit to farmers, as they have opened a medium, at their own doors, where they can be sure of the highest price for their stock. From the introduction of these markets, farmers must have learned many things which will ultimately be of great benefit to themselves, and the land under their control; and one thing taught more prominently than anything else is, that the better the stock the better the price; the better bred the easier fattened is the beast, and the better price will the beef bring. Your Directors trust that members of this Society will take earnestly into consideration the arriving at the best kind of stock for their lands, at the same time bearing in mind that the Durham or Short-horn seems, from trial, to have proved to be the animal which, in most localities, has been the most remunerative."

The *South Wellington* report speaks encouragingly of the general progress of the Society, and the great interests which it represents. Referring to the County Exhibition, it observes:—

“With respect to cattle, sheep and pigs, the County of Wellington maintained its well-earned reputation.”

“In the dairy department, the display of butter was most surprising, considering the scarcity of pasture, and the quality was pronounced A 1 by the judges. Cheese was not largely represented, and with respect to the factory made, only one of our makers exhibited.”

“In the exhibition of agricultural implements, there was a marked improvement.”

“Those who cultivated fall wheat this year were very fortunate, as contrary to the past, it turned out the best cereal crop we had. There were several varieties grown, all with the hope of avoiding the mildew, the general report rather proves this pest to be on the decline. The average yield was about 20 bushels per acre.”

The *Guelph Horticultural Society* appears to be in an improving condition. Of the fall show the report speaks:—

Owing to the severe draught during the summer, the display of horticultural products was not so good as we have seen at this time of the year, nor were the entries quite as numerous; still, all things considered, showed that there is a spirit of emulation among our horticulturists. We have many things to contend against, that gardeners who live in more favoured localities are exempt from, such as late frosts in the spring, which prevents us from commencing operations till so late in the season, and then are liable to have our early vegetables and flowers destroyed.

In fruit there was also a falling off to some extent, with the exception of plums, which were superior in quality, and the number of entries far exceeding those shown at any previous exhibition. Several new varieties were on the tables, which, for size and quality, were much admired.

“Since our last annual meeting, we are happy to state that a new Agricultural Bill has been passed by the Parliament of Ontario, by which aid is given to Horticultural Societies in the same proportion to the funds subscribed by the members, as is given to Agricultural Societies. This has enabled the Directors to make considerable additions to the prize list.”

“The *South Wentworth Agricultural Society*, held their Annual Turnip Match, by which the field roots, turnips, mangolds and carrots were examined in the field while growing, and although the season was rather unfavorable for green crops, the result was highly satisfactory, and they are happy to be able to state that the growth of those crops is largely on the increase in this Electoral Division.”

We have now gleaned from the Reports of Societies a number of passages possessing more or less a general interest, and it is much to be desired that our Agricultural Societies will in future give more precise information of what is going on within their different spheres of action. By furnishing material of a practical character, their reports will become

more interesting and useful to readers generally. We have noticed in looking through them, as condensed in the Commissioners Report, that a number of the Societies earnestly protest against the imposition of postage on Agricultural periodicals; contending that the tax operates against the circulation of information of the highest consequence to the best interests of the country.

PROPERTY IN ONTARIO.—From a Blue Book recently issued it appears that the number of acres assessed in Ontario in 1868, was 19,626,902; number of ratepayers 310,114; assessed value of real estate \$275,468,129; assessed value of personal property, \$24,318,768; amount of taxable income, \$6,578,923; amount of arrears of taxes, \$1,750,059; liabilities of the corporations in debentures, \$10,247,516; the principal amount due to municipal loan fund, \$845,878; other liabilities of the corporations amounted to \$1,125,638; the amount of revenue collected from taxes within the year, was \$3,151,086; the amount raised during the year by loan was \$239,665.

Arts and Manufactures.

The coach is a French invention. The first coach seen in England was in (about) 1563. In 1626 the vehicle was first plied for hire.

A SINGLE establishment in New York—the Singer Sewing Machine Company—turns out five hundred sewing machines per diem. The works are run night and day.

The first book stereotyped in America was *The Larger Westminster Catechism*, revised by A. M'Leod, D. D., New York, stereotyped and printed by J. Watts & Co., for Whitting & Watson, June, 1813. 12mo. Two copies of this work are in the New York State Library.

WOOD casks are now rendered almost as impervious as glass, by Mr. Scally's process of steeping the staves, before the cask is put together, in hot paraffin wax. This material permeates the pores of the wood, and renders it proof against the action of spirit, water, or acids. For preserving vinegar in casks this invention is most valuable.

It is said that collodion is a good varnish, by means of which the cause of the decay of eggs—viz.: the porosity of the shell, and, hence, access of air to the interior, may be prevented. The author of this method, Mr. S. Martin, also mentions that the soundness of eggs may be tested by immersing them in water containing 30 per cent of common salt in solution; in this brine, good and sound eggs sink, while bad eggs float.

DR. LETHBY considers moderately hard water better suited for drinking than that which is very soft—an opinion which is confirmed by that of the French authorities, who took the Paris water from chalk districts instead of from sandy strata. He also stated that a larger percentage of French conscripts are rejected from soft water districts than from neighborhoods supplied with hard water, and that English towns supplied with water of more than ten degrees of hardness have a mortality of four per one thousand less than those whose inhabitants use soft water.

An English journal gives the following: "A process has been discovered for the prevention of the decay of wood. As the result of a five years' experience, a paint is recommended, which at the same time possesses the advantages of being impervious to water. It is composed of fifty parts of tar, five hundred parts of fine white sand, four parts of linseed oil, one part of the red oxide of copper in its native state, and finally, one part of sulphuric acid. In order to manufacture the paint from this multiplicity of materials, the tar, chalk, sand, and oil, are first heated in an iron kettle; the oxide and acid are then added with a great deal of caution. The mass is very carefully mixed, and applied while hot. When thoroughly dry, this paint is as hard as stone."

According to the *Gaslight Journal*, walls of remarkable lightness, porosity, and dryness may be built cheaply of bricks made from the ashes of the coke derived from gas-works. Mr. Wagner, the first inventor of the process for effecting this, instructs us as follows as to his *modus operandi*: "The ashes, after being taken from the retorts, are spread on the surface of a clean floor; they are then finely pulverized, and 10 per cent of slacked lime, together with a small proportion of water, is intimately stirred and incorporated with them. After a rest of twenty-four hours, the mixture is made into bricks by the ordinary process. These bricks are immediately transferred to the drying sheds, where a few days' exposure renders them fit for use."

A MECHANIC gives the following method of so putting tires on waggons that they will not get loose and require re-setting:—"I ironed a waggon some years ago for my own use. Before putting on the tires, I filled the felcos with linseed oil, and the tires have worn out, and were never loose. My method is as follows: I use a long cast-iron heater, made for the purpose. The oil is brought to a boiling heat, the wheel is placed on a stick, so as to hang in the oil, each felco an hour. The timber should be dry, as green timber will not take the oil. Care should be taken that the oil is not made hotter than a boiling heat, or the timber will be burned. Timber filled with oil is not susceptible to injury by water, and is rendered much more durable by this process."

BAG HOLDER.—A very convenient arrangement for holding bags while filling them may be easily made as follows.—Take a piece of plank about twenty inches long and a foot wide, bevel off the sides a little, and nail strips of thin boards that will spring, six or eight inches wide, to it for uprights. The plank base should be bevelling enough to make the uprights about fifteen inches apart at the upper ends. The bag is placed between these, and the upper end folded over the ends of the shoulders two or three inches. It will be held firm, and in a convenient position for filling. The uprights should be just long enough so that the bag will rest upon the plank when being filled.

UNIVERSAL STANDARD OF MEASUREMENT.

According to the *Memoria Diplomatique*, the Austrian Government has just signified its assent to a proposal of the French Government for an International Commission to assemble in Paris in order

to agree upon a common standard of measurement for all civilized nations. Already fifteen European powers have announced their willingness to take part in the Commission. Even England, which hitherto has been disinclined to depart from old customs, will be represented by the Directors of the Observatories of Greenwich and Oxford. The French Government now only awaits replies from the United States, Brazil, and the South American Republics previously to calling together the Commission. The Minister of Foreign Affairs would, of right, be the honorary president, but the proceedings will really be directed by the vice-president, General Morin, Director of the Conservatoire des Arts et Metiers, in whose archives is deposited the official standard of the meter recognized in France.

AN INGENIOUS LUNATIC.

The *Pall Mall Gazette* tells the following story of a lunatic who recently escaped from an asylum in Ireland, and who was noted for his mechanical ingenuity:

"He could do things quite beyond what men in general can perform, and his cleverness was even exceeded by his versatility. He was a good shoemaker, a tailor, a weaver. He made from a scrap of iron a key by which he could open the door of his division. He put together a wooden sewing machine of his own contrivance, with which he made clothes for himself; and his mind just before his escape seemed so intent on improving this machine that there was little apprehension of his attempting to escape.

"His career, it is stated, before he came to the asylum was most extraordinary. He had been in the British army, in the French army, and in the French navy; and had been in British, German, and Russian prisons.

"He had a fair grammatical knowledge of French, he knew something of German, and was completely self-taught; his age, although he had passed the various phases of existence above described, was only twenty-seven."

USEFUL HOUSEHOLD RECIPES.

TO IMPROVE STARCH.—To each bowl of starch, add one teaspoonful of Epsom salts, and dissolve in the usual way by boiling. Articles starched with this will be stiffer, and will be rendered to a certain degree fire-proof.

TO REMOVE STAINS FROM LINEN.—To remove wine, fruit, or iron stains, wet the spot with a solution of hyposulphate of soda, and sprinkle some pulverized tartaric acid upon it; then wash out as usual. Strong vinegar can be used instead of the tartaric acid.

MOth POWDER.—Lupulin (flower of hops), 1 dram; Scotch snuff, 2 oz.; gum camphor, 1 oz.; black pepper, 1 oz.; cedar sawdust, 4 oz. Mix thoroughly, and strew (or put in papers) among the furs or woollen to be protected.

LIQUID FOR CLEANING SILVER.—Add gradually 8 oz. of prepared chalk to a mixture of 2 oz. of spirits of turpentine, 1 oz. of alcohol, $\frac{1}{2}$ oz. of spirits of camphor, and 2 drams of aqua ammonia. Apply with a soft sponge and allow it to dry before polishing.

An express train on the Alleghany Valley Railroad, running at the rate of forty miles an hour, was lately brought up all standing against an obstruction on the track, consisting of rocks and dirt, the result of a land-slide. This train was fitted with Miller's platforms, buffers, and couplers. Notwithstanding the fearful velocity of the train no lives were lost, as the cars did not telescope, as ordinary fastened cars would have done under the same circumstances. Miller's inventions should be adopted on all railroads without delay. On the Missouri Pacific Railroad nineteen passengers were lately killed by telescoping of the cars.

ART GLEANINGS.

PURIFIED benzine has lately been prescribed for cases of trichiniasis in Europe, with good results.

A EUROPEAN chemist has prepared and put into the market extracts of garden vegetables, to be used as flavorings for soups and other culinary dishes.

THE saving of expense by recent improvements in machinery is marvelous. Chipping and filing iron surfaces used to cost by hand nearly three dollars per foot, but it is now done for two cents!

In some parts of Germany every bottle containing poison is labeled with a death's head and crossbones as black as printer's ink can paint them. Every parcel of poisonous medicine sent to a patient has a similar label over the address. "Pray help me," writes 'a traveled parson,' "to urge upon our chemists and druggists the adoption of this very simple method, which is plainly within the comprehension of the dullest boy that ever handled a pestle and mortar."

A CHEAP substitute for per-manganate of potash in purifying water from vegetable substances has been found in the black oxide of iron. It may be readily prepared by heating the common red hematite, finely pulverized, with sawdust in a crucible. Probably the black scales collected about blacksmith's forges would answer the same purpose if they are first cleared of dust. A portion of this oxide of iron placed with the sand in a cistern filter, is said to be very effective in removing vegetable impurities.

A NUGGET of pure copper, weighing 117 pounds, was discovered in an Iowa field the other day. It had been kicked about for years, under the supposition that it was a stone. Finally, the tooth of a harrow scraped against it, making a bright streak, which revealed its true nature. It is pure metal without the least alloy, stone, or quartz. The locality where discovered is in Cedar township, Monroe county, and hopes are entertained that extensive deposits may underlie the whole region.

MARBLES are chiefly manufactured, says the *Journal of the Society of Arts*, at Oberstein, on the Nabe, in Germany, where there are large quarries and agate mills. The substance used is a hard calcareous stone, which is first broken into blocks nearly square, by blows with a hammer. These are thrown, 100 or 200 at a time, into a small sort of mill, formed of a flat stationary slab of stone, with a number of concentric furrows upon its face. A block of oak or other hard wood, of the same diametric size,

is placed over the small stones, and partly resting upon them. This block, or log, is kept revolving, while water flows upon the stone slab. In fifteen minutes the stones are turned to what are henceforth termed "marbles." One establishment, containing only three of these rude mills, will turn out as many as 60,000 marbles in each week. Agates are made into marbles by skillfully chipping the pieces nearly round with a hammer, and then wearing down the edges upon the surface of a large grindstone.

Hearth and Home.

FARMING FOR BOYS.

CHAPTER XII.

A GREAT BRIER-PATCH.—PUTTING IT TO GOOD USE.—AMAZING THE NEIGHBORS.

On Spangler's unwieldy farm of a hundred acres there was a large piece of neglected land, which had long been known as the "old field." For many years it had been grown up with common wild blackberries, which so completely occupied the ground that almost every other kind of plant was smothered out. There were a few straggling grape-vines among the dense mass of briars, but these could not have survived had they not been able to climb to the top of the blackberries, and so and so get up into air and sunshine. Neither man nor boy had ever been able to traverse this immense thicket. Hence it was selected by the birds for building their nests in summer, and by rabbits as a hiding-place in winter. It was therefore a choice neighborhood for the boys to set their traps and snares, and many a fine stew for dinner did they secure by thus trapping its timid inhabitants.

One day in July, Uncle Benny and the boys were walking on the outside of this great brier-patch, and wondering at the immense crop of berries it was producing. The tall canes had shot away up above their heads, and were bending down with a heavy load of fruit, forming, with the old canes, a tangled mass of dead and living wood, into which no one could force his way. They could reach the fruit on the outside of the patch, and here they stopped, and began to pick and eat. This the boys and girls of Spangler's family had been in the habit of doing as long as they could remember, without any thought of turning the great crop upon the "old field" to any other use.

"Boys," said Uncle Benny, "there is a good deal of money in this brier-patch, if you only knew it, all of which is now going to waste."

"What do you mean, Uncle Benny?" inquired Tony King.

"Why," rejoined the old man, "have them picked, and sent to Trenton market."

Here was a new idea for the boys to entertain; for they had all their lives seen the great annual crop going to waste. But they followed the matter up, and talked it over, until they finally determined to take the old man's advice. The thing had to be made a partnership affair, in which all the boys and girls of the family were to be equally interested; so the Spangler girls were enlisted in the cause, they agreeing to assist in picking the berries, if the boys would see to having them taken to market. As these young people very rarely had any spending-money in their pockets, the prospect of making a dollar or two apiece was a great stimulant to exertion. If the boys wanted to buy any little notion, the girls were just as anxious to have some bits of finery for themselves.

The whole party were therefore up every morning by daybreak, picking blackberries. It was a rather scratchy kind of work, as the briers upon the untrimmed bushes lacerated their hands, and tore a good many holes in frocks and aprons. Each picker strove to push himself into the patch as far as possible, anxious to reach the fruit; but the farther he pushed in the worse it was for him.

Bill Spangler, the youngest boy, as well as the smallest and most adventurous, had a particular ambition for creeping into certain openings among the bushes, and thus succeeded in securing more berries than the others. But on one of these adventures the briers unfortunately laid hold of the hinder part of his thin summer pantaloons, and maintained so firm a grip, that, in tearing himself loose, and getting fairly outside among the others, his sister Nancy told him that his covering was so ragged that she was ashamed of him. Even Uncle Benny, whenever Bill was looking another way, couldn't help pointing with his cane at the fellow's rags, and laughing quite out; and as the others enjoyed the joke as fully as he did, they had a merry time over Bill's misfortune. The plain truth was,

that several inches of Bill's shirt had escaped through a huge rent, and, abandoning its proper place of confinement, was dangling out of doors.

They secured, nevertheless, a large quantity of berries, as the "old field" covered full six acres, and it was a long stretch to go round it. Then they were able to do this three days during every week that the fruit was ripening. But it was very trying work, much more so than if the canes had been planted in regular rows, and trimmed and kept snug.

Uncle Benny had promised them he would see to taking the berries to market, and having them sold. This he did faithfully, as he was anxious to do all he could to train up these young people, girls as well as boys, in habits of industry and thrift. The very first week's picking produced a sum so large that every one of the party had over two dollars to his share. Then the next week did even better.

It was curious to see how this unexpected acquisition of a little money affected these young people. It filled a great gap in the longing heart of Tony King. They were so unused to having any, that they scarcely knew what to do with it, and appeared to think the only use for money was to spend it. A dozen different schemes were formed as to spending, as the idea of saving had not entered the mind of any one of them. But Uncle Benny cautioned them not to be in a hurry, and to hold on to their cash, at least until they had done picking. Some had desired him to buy one thing or another in Trenton, and bring it home to them, but he never did so. He thought that, if they could be got through the first feverish excitement of success, they would be more manageable in future.

The great fruit-growers of our country, who cultivate from ten to twenty acres of the most valuable varieties of the blackberry, may smile at this small beginning of the Spanglers on a patch of common wild ones. But they must remember that the public never had a taste of these improved varieties until within a few years, and that, until they did come into notice, everybody was satisfied with the uncultivated fruit that sprung up along neglected hedge-rows, or in such old fields as had been abandoned to them. These children were only doing in one place what hundreds of others

were doing in many other places where a market was within reach. The consumers, as well as the pickers, were satisfied with this coarse fruit. Being thus a good bargain for both parties, the trade was kept up wherever the common blackberry was near enough to market.

There are sections of our country in which this business of gathering wild fruit is an important item toward the maintenance of many families. They look to the blackberry harvest as a certain income. Entire households, men as well as women, abandon all other employments, and take to picking berries. They need not carry them to the cities to find purchasers, but meet with wholesale city buyers at every railroad station. These pay cash to the industrious pickers, and forward the fruit to market, where it is retailed at a higher price. They have their profit, of course, but the pickers have a better one, because the fruit costs nothing beyond the labor of gathering it; and this division of labor and profit is sufficiently remunerative to keep the business going from year to year, notwithstanding the extensive introduction of superior varieties. If it were not for this division, it is probable that the great cities would be compelled to do without much of the fruit they now consume.

But this gathering up of wild fruit by poor families is not confined to the blackberry. The woods of New Jersey are annually ransacked for the huckleberry, of which astonishing quantities are collected and sent to market, producing very serviceable amounts of money to the industrious pickers. The wild cranberry is also gathered in large quantities by the same class of people. These successive harvests, which Providence bountifully prepares for those who dwell in huts and shanties on the borders of civilization, are as much depended on as are the wheat and corn crops of the most extensive farmer.

Uncle Benny knew all about these things, and was determined to make them contribute to what he considered a praiseworthy ambition of the Spranglers to make a little money for themselves. Some of the boys wanted books, and tools, and other juvenile notions, while the girls had a dozen matters of their own to be supplied with. He thought this "old field" might be turned to great

account, and hence his recommendation that the boys should not be in an hurry to spend their money, as he had a plan of his own in relation to making the "old field" a really profitable affair to them. He was satisfied there was a fair chance by which to make the very beginning they had all been striving after.

When the blackberry crop had all been picked and sold, everybody on the farm was surprised at hearing that it footed up sixty dollars, clear of all expenses. It was really so much money found; for though the "old field" had ripened probably fifty crops, not a cent's worth had ever been turned into cash. What the family had not picked for their own use had been taken by the birds and wasps, or perished on the bushes. Philip Spangler was particularly astonished at the result. He said it would pay a half-year's interest on his mortgage.

"Yes," observed Uncle Benny in reply, "I can make this brier-patch pay interest and principal too, if you will only allow me to do what I please with it."

Spangler readily agreed that he should do as he desired, and a regular bargain was made between them on the subject. Uncle Benny was to have entire control of the blackberry field; he was to get what he could from it, and after retaining three-fourths of the profits for the boys, the other fourth was to be paid to Spangler, who pledged himself that it should be applied to paying off the mortgage on the farm.

The history of this "old field" of six acres is so remarkable that it may as well be related now. It will be remembered that it was only from the edges or outskirts that any fruit had been gathered. All the interior of the field was filled with bushes nearly as productive as those on the margin, but it was impossible to reach them. Uncle Benny made a calculation as to how many rows of canes he could make by cutting away open spaces ten feet wide from one side of the field to the other. He then compared the result with the length of margin from which they had been picking, and satisfied himself, that, if that had produced sixty dollars, he could get a sufficient length of picking surface to make the "old field" pay almost as good a profit as was made on half the entire farm. There was the

ground already planted with bearing canes, and nothing more was needed than to transform it from a field of wild blackberries into a cultivated one.

He was satisfied that he knew how to make the change. He was sure there would be all the fruit he wanted, and that cultivation would cause the berries to grow larger and look nicer, and therefore to bring a higher price. Besides, he had quietly consulted the market-men at Trenton about what he intended to do, for he was a little in doubt as to their being willing to buy the immense quantity of berries he expected to have another year. He was somewhat uncertain as to there being mouths enough to consume this crop. But they all smiled at the idea of his being able to raise more than they could sell, and told him to go ahead, as they would take twice as large a crop as he could turn in. It seems that one was concerned in a great canning establishment, where thousands of quarts were preserved in glass jars for distribution over the country, and he was assured that this concern alone could take all he might be able to produce.

This fear of glutting the fruit market is a very common one with people who know nothing of the business; but it never troubles those who have been a lifetime engaged in it. Where to find a market occasions them no distress. Their only concern is how to produce the fruit, as it may be said to be all sold even before it is grown; that is, when one is located near a great market. Uncle Benny's doubts being thus dispelled, he went to work immediately by hiring two men for the job, who began as soon as the leaves had fallen.

As before said, this immense brier patch covered six acres of ground, about twice as long as it was wide. He directed the men to make openings ten feet wide clear across the width, leaving a narrow row of canes. They went in with sharp brier scythes, and rapidly cut down everything before them; though it was tearing, scratching work for hands and clothes, as many years' growth of dead and hard wood had to come away. Then the trimmings were piled on a cart, and brought out, and thrown into an immense heap, where they were burned. Then all the dead wood was cut out from the rows thus left standing, and the new canes were shortened wherever they had grown too high. This trash was also carted away and burned. When this thorough cleaning up and trimming had been completed, every row looked as nice and as snug as any of the great fields of the improved kinds of blackberries which are now so common. Where vacant places occurred in the rows, they were filled by setting new roots. The spaces between the rows were then gone over with a double plough, which tore up thousands of old roots, and this being several times followed by a two-horse harrow, it

loosened and released a multitude of others,—so many, indeed, as to require a mass to be raked up and carted away.

But when these several operations had been as carefully carried out as Uncle Benny required them to be, the whole field looked more like a garden than any spot on the farm. It was really beautiful to see how perfectly straight the rows of canes stretched across the field, and how mellow was the soil between them, not a root or weed being visible. It was with immense satisfaction that the old man viewed the complete realization of his plans. It took some weeks to carry out this regenerating process, besides costing considerable of money,—all which he cheerfully advanced, on the credit of next crop.

But he declared that the satisfaction he enjoyed in seeing a wilderness converted into a fruit field was compensation enough. It was a greater pleasure for him to spend money in improvements of this description than it could possibly be to others to hoard it.

Spangler had seen the operation going on, but said little, except dropping a remark occasionally about how much money it was costing. Improvement was altogether out of his line. But one day when Uncle Benny happened to be contemplating, by himself, this triumph of his ideas, he was suddenly accosted with:

"Well, well, what a spot of work this is!"

Looking round, he discovered their neighbor, Mr. Allen, who, until that moment, had seen nothing of Uncle Benny's operations in the brier-patch. He seemed confounded with the spectacle before him.

"Why, Uncle Benny, you beat me all to pieces! This is the completest piece of workmanship ever done in the country. I give you credit for your good judgment, as well as for your courage, and what is more, this thing is going to pay. It is a big job, I know; but the more of it the better for you."

Spangler came up while Mr. Allan was thus speaking, but made no remark, though Mr. Allen's emphatic indorsement of Uncle Benny's work had its effect upon his generally slow perceptions.

"What a mass of manure you have in the bottom of this brier-patch!" he continued. "I have known it thirty years, exactly as it was before you reclaimed it. Thirty or more crops of wood and leaves have fallen and decayed on this ground, perhaps fifty; and, now you have so thinned out the plants as to have only one to feed where there used to be fifty, you will need no manure for years to come."

But the fame of the undertaking spread over the neighborhood, it being an unheard-of thing among the owners of brier-patches. Many persons went to see it, and various opinions were expressed as to

what was likely to be the end of it. The principal anxiety was as to how much it cost. They could all understand about that, but not one of them could see that the money expended could ever be made to come back. As to investing money in new undertakings upon faith, that was not in their line. Generally, they knew too much about blackberries; so that Uncle Benny never had the satisfaction of hearing that any one had pluck enough to follow his example.

But that absence of encouragement was of no importance to him. He had a mind and will of his own; he didn't pin his faith on any man's judgment; he knew what he was about; he had a little money to invest, and it was of no consequence whether other folks approved of his doings or not. How far he was correct will be set forth in a future chapter.

Poetry.

PRAYER FOR RAIN—AND PRAISE.

BY EDWARD P. WESTON.

God in His mercy, hear
Our cry of pain;
The fields are crisp for rain.

The heavens overhead
Are ceiled with brass,
And the clods are dust, instead
Of springing grass.

Evil alike and good
Thy promise read,
Not worthy of the food
For which they plead.

O'er burdened with such prayer,
"This poor man cried,"
Like one of old, somewhere,
At eventide.

And when the midnight passed,
Robed in his black,
The rain came sweeping fast
Upon his track;

And on the cottage roofs
Tramped such a tramp,
As of a thousand hoofs
Prancing from camp.

And then the poor man cried,
Starting with fear,
Which in a moment died,
"God's rain I hear!"

Then in his heart unsprung
Tumultuous praise,
Which his poor fettered tongue
Essayed to raise.

Falling to dreams again,
If yet he slept,
He smiled, e'en while the rain,
Repenting, wept.

Green fields on every side,
In vision born,
And little hills, in pride,
Of lifting corn,
Clapped hands, the night hours through;
And when the gray
Strove vainly to undo
The bars of day,

Still swept across the roofs
The trooping tramp
Of rain-hosts' rattling hoofs,
Out of God's camp!

And then the poor man said,
"God's hand I see;
What time I am afraid
I'll trust in Thee!"

—Chicago Journal.

WHO'D BE A BUTTERFLY?

A NEW VERSION.

Who'd be a butterfly? Not I for one!
Chased by each idle young son of a gun,
Damaged by many a slap and rap
From tatterdemalion's unmanly cap!
Who'd be a butterfly? Who, I say, who?
Not I, for one! For another, not you!

Caught by rude hands, whose brute owner presumes
Fingers don't damage our delicate plumes:
Rubb'd with rough touches till powerless to fly,
Then loosed to flutter away—and to die!
Who'd be a butterfly? Who, I say, who?
Not I, for one! For another, not you!

Who'd be a butterfly? E'en at the best,
Prey for the keen entomologist's quest,
Pierced with a pin, and with pinions displayed,
Safely away in a cabinet laid!
Who'd be a butterfly? Who, I say, who?
Not I, for one! For another, not you!

Ah! brother-butterflies—two-legged, I mean;
From these poor insects what mortals we gleam:
Do not our faults which the angels deplore
Soil our bright wings till they sink—and not soar?
Who'd be a butterfly? Who, I say, who?
I am, for one! For another, are you?

E'en at the best, we have butterfly-fame,
Pinned in a case with a label and name—
Gazed at with pride for a week—or a day—
Then in a dark cabinet huddled away!
Who'd be a butterfly? Who, I say, who?
Well, I'm afraid, my good friend,—I and you.
—Fun.

FLOWERS.

Your voiceless lips, oh flowers, are living preachers,
Each cup a pulpit, every leaf a book,
Supplying to my fancy numerous teachers,
From loneliest nook.

'Neath cloistered boughs each floral bell that swingeth,
And tolls its perfume on the passing air.
Makes Sabbath in the fields, and ever ringeth
A call to prayer.

Not to the dome where crumbling arch and column
Attest the feebleness of mortal hand,
But to that fane most catholic and solemn
Which God hath planned.

To that cathedral boundless as our wonder,
Whose quenchless lamps the sun and moon supply.
Its choir the winds and waves, its organ thunder,
Its dome the sky.

There, amid solitude and shade I wander
Through the green aisles, or stretched upon the sod,
Awd by silence, reverently ponder
The ways of God.