Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- ☐ Coloured covers/ Couverture de couleur
- ☐ Covers damaged/ Couverture endommagée
- ☐ Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- ☐ Cover title missing/ Le titre de couverture manque
- ☐ Coloured maps/ Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- ☑ Bound with other material/ Relié avec d'autres documents
- ☑ Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- ☐ Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- ☐ Coloured pages/ Pages de couleur
- ☐ Pages damaged/ Pages endommagées
- ☐ Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached/ Pages détachées
- ☑ Showthrough/ Transparence
- ☐ Quality of print varies/ Qualité inégale de l'impression
- ☑ Continuous pagination/ Pagination continue
- ☐ Includes index(es)/ Comprend un (des) index

  Title on header taken from:/ Le titre de l'en-tête provient:

- ☐ Title page of issue/ Page de titre de la livraison
- ☐ Caption of issue/ Titre de départ de la livraison
- ☐ Masthead/ Générique (périodiques) de la livraison

☑ Additional comments:/ Commentaires supplémentaires: Wrinkled pages may film slightly out of focus.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
							✓				

AGRICULTURAL REVIEW.

JULY.

CONTENTS :—Agricultural Review—Official Department—Meeting of the Board of Agriculture for Lower Canada—The next Provincial Exhibition in Montreal—The industrial building and show grounds—Exhibition Committee—Invitation to his Excellency the Governor General.—**Editorial Department.**—The Montreal Agricultural and Industrial Exhibition—The prize list—Upper Canada Exhibitors—Agricultural Colleges—Our election as Member of the Provincial Parliament for the County of Richelieu—Read continually—The Agricultural College—A letter to Governor Coburn and the Legislature Elect—Value of the appropriation—The grand purpose—The Normal Element—The cost to the State—Shrews and Moles—Thoughts on Economy.—**Field Operations.**—Our Swamp—How it was drained and how muck was used—Night Soil—Irrigation, its objects and effects—Clover—Saving the seeds.—**Breeder's Department.**—Tight barns—Unhealthy Stables—New Method of making butter—Rules for making cheese—Rennet—Tools and Vessels—Thermometer—Dipper—Cheese Cloth—Hoops—Process—Additional Particulars—A rat sucking a cow.—**Domestic Department.**—How to preserve Eggs—Experiment of Mr. Reaumur with Varnish—Melted fat—Lime water.

Official Dep'nt.

BOARD OF AGRICULTURE FOR LOWER CANADA.

Montreal, 12th June, 1863.

PRESENT:

Hon. L. V. Sicotte, *President*; Major E. Campbell, *Vice-President*; Hon. U. Archambault, O. E. Casgrain, Esq., J. C. Taché, Esq.

The President takes his seat, and after some explanations with Messrs. B. Chamberlin, and R. Bulmer, representing the Board of Arts and Manufactures, relative to the Provincial Exposition to be held in Montreal next September, the following resolutionswere unanimously adopted:

Resolved:—That the Board of Arts and Manufactures place the Industrial Palace and the grounds attached to it, at the disposal of the Council of the Agricultural Association and the Board of Agriculture.

That during the necessary time, the said building and its dependencies, shall be under the control of the Committee named to administer the affairs relative to the Exhibition.

Resolved:—That all the receipts from entries and other sources of revenue of the Exhibition be laid in the hands of the Secretary Treasurer of the Board of Agriculture to meet the expenditure of the Exhibition.

Resolved:—That a Committee, having the direction and administration of the Exhibition, be authorized to prepare all necessary instruction for the Local Committee and for the guidance of the said Committee.

Resolved:—that the direction and administration of everything concerning the Exhibition of Lower Canada be let and confided to a Committee composed of the following gentlemen; namely:

B. Chamberlin, Esq., President Board of Arts and Manufactures; U. Bulmer, Esq., Vice-President; Hon. L. V. Sicotte, Pres. Board of Agriculture; Major E. Campbell, Vice-President, and Hon. U. Archambault.

Resolved:—That His Excellency the Governor General be invited to honor with his presence the Provincial Exhibition to be held in Montreal next September.

And the meeting adjourned.

By Order,

GEORGE LECLERE, *Secretary*, B. A. L. C.

THE MONTREAL PROVINCIAL EXHIBITION.

Active preparations are now being made to secure the greatest possible success to the coming Provincial Exhibition.—Agriculturists of both sections of the province are busily engaged in getting their choice stock in fit condition, and manufacturers are getting up samples of every article which can compete in the industrial department. The close proximity of Kingston, where the Upper Canada Exhibition is to be held this year, the week following, will no doubt prove a fit occasion for exhibitors of the other section to come in the field and compete with Lower Canada for the very numerous and high premiums offered in our prize list. Farmers will find in Montreal a ready market for improved stock: and we should advise Mr. Stone from Guelph, Mr. John Snell from Edmonton, with some of their friends to favor us with their presence. Every acommodation will be furnished, in the best style; and $12,000 are offered in premiums, so as to meet the wishes of the Upper Canada breeders. The Montreal exhibition prize list is that of Toronto last year, with the same classes, sections, and same amount of premiums.

We have every reason to believe that a large attendance will be secured not only from Lower but from Upper Canada. Arrangements are being made with railway and steamboat companies. The presence of his Excellency, the Governor General, is expected, and the city of Montreal is prepared to do its utmost so as to give full satisfaction to the numerous visitors whose attendance is expected on the exhibition days. The Industrial Palace is now being prepared for the occasion, and the show grounds are receiving due attention.

We should therefore advise all intending exhibitors to get ready in the shortest possible time, and to make their entries at once.

We will publish a catalogue as complete as circumstances will permit, and a great deal of trouble will be avoided by going to work at once and giving us those entries which can be now made.

EDITORIAL DEPARTMENT.

AGRICULTURAL COLLEGE.

Since our last issue we have had the honor of being returned a member of the provincial Parliament, by the County of Richelieu, with a majority of 213 votes. This result is certainly most satisfactory to a pupil of the Royal Agricultural College of Cirencester and of the Imperial Agricultural School of Grignon, who had his diploma as his only title to the confidence of the electors; and it goes far to prove that agricultural education, when thoroughly possessed, is the most ready means, in Canada, of taking a prominent stand in our community. How is it that the agricultural interests of this country are represented in parliament by so small a number of agriculturists? For the very simple reason that farmers have not the occasion of acquiring agricultural knowledge in the schools now open to their education. They are condemned forever to inferiority if they do not stand out boldly and ask for themselves, from our representatives, that education which is so lavishly spread through the land in favour of every professional pursuit. It is high time that farmers' sons should have their share of public patronage, to acquire that agricultural knowledge which alone can place them on an equal footing with the more favoured classes of our community. We must have our agricultural colleges as well as our universities; and it is high time that public opinion should be directed on this very important question. We will make it a duty to bring it up in parliament so as to put an end to an injustice wich bears so intensely on our agricultural interests.

FRUIT TREES.

In calling the attention of the public to the importance of setting out fruit trees, I would urge not only the pleasure of eating the fruit and the profit of its production, but the more important consideration of the good moral influence it tends to secure in the town, village or neighborhood.

Young people of both sexes are universally fond of fruit; and when it is ripe and is used in proper quantities, it is conducive to health.

But how shall they enjoy this luxury lawfully unless there are fruit trees on the premises where they live? Few families who live in villages are in such circumstances that they can afford to purchase a good supply of the various kinds of fruit that might be raised on a small piece of ground. Many persons, when they build a house, surround it with forest trees instead of fruit trees. This taste for forest trees around one's house, no doubt, arises mostly from a desire to be in the fashion. But should the desire to follow the fashion or taste of others deprive our families of one of the best privileges that can be enjoyed?

When I see a house shaded all around with forest trees instead of fruit trees, my first thought is, that the inmates care little about good ripe fruit. Is that the case? Most assuredly it is not, for those who are thus situated are generally more anxious to get fruit than those who have it round their homes. I have noticed that when there is no fruit on the premises where a family live, the children are in many instances very much inclined to obtain it, if it is growing in the neighborhood. Children have so great a desire to get fruit to eat, that in many cases, although they have been cautioned against taking what does not belong to them, they will, when they think no one is in sight, help themselves to what they want.

The habit is soon acquired of taking what does not belong to them, and by a little practice, which will naturally follow, they soon consider that it is a small affair, or no crime at all to take fruit; and in this way, those who by care and proper attention to the raising of fruit have obtained a supply of good quality, are deprived of it by the families who have paid no attention to its culture.

But this is not the worst part of the result of not having fruit on the premises where a family of children live. They who are in the habit of purloining small things, in many cases contract a habit which lasts through life; and no person, young or old, can long continue to take what does not belong to them without being disgraced, as a loss of reputation naturally follows. If they remove from the place where they were brought up, their neighbors may visit the place from which they removed and inquire what their reputation was, and are informed what character they sustained when young. There will thus remain a distrust, in many cases, through life. A great portion of those who are, and have been confined in our States' Prisons, can trace their downfall to the practice of taking fruit and other small things in the days of their youth, and will inform those who inquire, that if they had been furnished with those things at home, they would not have obtained them unlawfully.

CHURNING.

Cream from fresh cows should be in such a condition and at such a temperature that the butter will come in 30 minutes. In autumn, it will require an hour. If the butter comes quickly, it is not so good, nor in full quantity. If churned too long, it is injured. The temperature of the cream should be 62° to 65°, regulated by a thermometer. Guessing will not do. Do not pour hot or cold water into the cream, to temper it: but, if there is no thermometer churn to be had, put the cream in a tin pail and set it in warm or cold water, as the case may require; or set a tin pail, with hot or cold water, into the cream. Cold is most readily imparted by the latter mode, and heat by the former, because cold descends, and heat rises. Butter is delayed in coming, in cold weather, by four causes, namely: keeping the milk so cold that the cream does not sour; mixing sour and sweet cream; mixing cream from old and new cows; and too low a temperature for the cream. Sometimes the granules of butter will not 'gather"—in which case a lump of butter thrown into the churn will form a nucleus, around which the butter will soon collect in masses.

READ!

Read continually, only reserving such time for relaxation, and the duties of life as your situation may require. Don't sit with your hands folded and mouth open, doing nothing; these are minutes which you are wasting—minutes make hours—hours make days and weeks, and all combined are swiftly flying toward eternity. Then read!—read everything and anything, except low and trashy subjects: there is no branch of art or science or of literature from which, properly perused you may not get some valuable information. The difference between the reader and the sluggard, who sits in the rocking chair asleep of an evening, is as great as the contrast between a fool and a sensible person; the former goes about the world, sees, hears, thinks and digests the results of his observations during his travels; he will presently give those reflections to the world in a new and interesting shape and thus make other readers. But the sluggard is a useless character and not worth the ink to describe him. Read an almanac if you cannot get a paper; and he must be poor indeed, as the bard singeth, who cannot afford a subscription to some journal in this age of the world. At all events leave no means untried to cultivate and improve the spare hours which you will have during the winter months. If you smoke, read!—if you are waiting somewhere on business, take out your paper and peruse its columns; you will soon find the advantages of the practice. We have a great reputation as a reading nation; a paragraph went the rounds of the press some time ago, which was intended for a joke, but it was in reality a compliment; it said, that if a traveller abroad went into a room where there was a number of Americans, he would be sure to see two-thirds of them reading newspapers. So he will. Go into the theatre, or the concert room, and you will find a large portion of the audience beguiling the tedious half hour previous to the commencement of the festivities, with a magazine or paper. This is to their moral advancement and benefit, always supposing the mental food to be of a wholesome nature; and the future of any people who are readers and thinkers is just as certain to be glorious as it is an established fact that water finds its level. Intellects find their level; they find them in one way or another—in the newspaper, through the magazine, or in the heavier essays which require patient toil and thought to eliminate and elaborate. Then read! continue to peruse every scrap of information within your reach: there is *gold* everywhere. California has not the only gold mines in the country; there are solid nuggets laid up on the shelves of the library which all the wealth of the Indies is powerless through itself to produce; there are stores of information of every kind under the sun within your reach, that cannot perish. Time shall overwhelm all things and render mines useless, gems of no value. The thief may in an hour destroy the labor of a lifetime in accumulating a fortune, but no power, short of a divine one, can wrest the riches of a well-stored mind from its possessor. Again we say—read!

THE AGRICULLURAL COLLEGE.

A Letter to Gov. Coburn and the Legislature Elect.

Gentlemen,—It is matter of congratulation that amid the pressing war duties devolved upon Congress at its last session, time was found to mature and enact so many measures of public utility in the interest of peace. Among these is the act to provide for agricultural and scientific education in the several States of the Union. By this act, a grant of public lands, equal to thirty thousand acres for each member of Congress under the new apportionment, is made to each State which shall accept it with the annexed conditions, within two years from the date of the President's signature, July 2d, 1862. To secure the benefits of this appropriation, action must be taken by the Legislature. As the time for the meeting of this body approaches, it is perhaps well that the subject be brought to the attention of the people and their representatives.

Value of the Appropriation.

Under the new apportionment we have seven members of Congress,—five Representatives and two Senators,—which give, as our portion of this munificent grant, two hundred and ten thousand acres. The nominal value of these lands is $1,26 per acre, or $262,500 in the aggregate. Supposing the whole to be worth but one dollar per acre, we have the sum of $210,000, ten per cent. of which may be expended for building sites and experimental farms. The remainder is to be funded in the securest manner; the interest only to be used for the support of the college or colleges, which may be put in operation.

Allowing for any contingencies which may arise, if we may estimate the entire fund at $209,000, and deduct ten per cent. for sites and farms, we have $180,000 to be invested. Suppose this to yield an interest of five per cent., the minimum contemplated by the act, we shall have an annual income of $9,000 with which to conduct the operations of the college.

The Grand purpose.

The leading purpose for which this appropriation is made, is declared to be "to teach such branches of learning as are related to agriculture and the mechanic arts,"—"without excluding other scientific and classical studies, and including military tactics." The clause providing that the course of instruction shall not be limited to agricultural and mechanical studies is a very wise one. Thus restricted, it would have failed to confer upon the community the full benefits of which it is capable. On the basis now provided,—in the pecuniary fund, and in the liberal course of study which may be adopted,—we may build up an institution of which the State may be proud, and in the benefits of which her poorest sons may rejoice.

The Normal Element.

The branches to be taught in the agricultural college will include those required in our normal schools; and the class of young men most likely to resort to the one, are precisely those who need the advantages of the other. Our intelligent and well-educated farmers, at least during the years of their younger manhood, make some of the most reliable and efficient teachers of our winter schools. And even to those who would

not be interested in matters of practical teaching, the study of *didactics*,—the science and art of teaching,—would be of incalculable value. It is quite as true of men in other walks of life, —in farming and the trades,—that they "know more than they can tell." I'm not speaking of that other class who can tell a great deal more than they know! The power to make clear and intelligible statements,—to present any subject in such a way that a child can understand it, is an attainment as valuable as it is rare. There is good reason, then, in this general consideration, and better reason in our pressing need of a State Normal School, that the course of instruction in the proposed agricultural college shall include a department of didactics.

Instruction in military tactics,—required by the act,—will not be amiss; especially if there shall be included in the study the science of turning swords into plowshares and spears into pruning hooks: a science peculiarly appropriate to an agricultural course.

The Cost to the State.

It was probably a well considered feature of the act, that no part of the appropriation can be used for the erection of buildings for the proposed college. In the establishment of institutions of learning, there have been too many examples of improvident expenditures for mere externals, leaving but little means for the weighter mattersappertaining thereto. To guard against danger from this course, the act provides wisely, if not *conveniently*, that the State shall incur the expense of erecting or otherwise securing the necessary buildings. This will probablp be urged as an objection to accepting the grant. A wise policy, however, will not long weigh the expenditure of a few thousand dollars for this purpose against the magnificent donation thus placed within our reach. If the State should hesitate, in these times of pressure, to make the necessary appropriation for the erection of new buildings, there are other methods still open to us. Of the literary institutions now in operation, there are several which would be very ready to offer the use of their buildings for this purpose.

It is earnestly hoped that the Legislature will deliberate wisely, and decide firmly to pursue such a course as will secure the highest advantages of the contemplated measure, without regard to local feeling or sectional or institutional interests.

The war is not for always. Peace with her nobler pursuits will return to us; we shall need the best possible agencies to develop our resources and to retain our people to the largest intelligence and truest patriotism, and we should hail with pleasure the prospect and the promise of new facilities by which the masses of our population may acquire the scientific and practical education so essential to our highest progress as a great people.

Not doubting that the incoming State Government, like that which is about to retire, will cherish the educational interests of the State, and add to their efficiency as much as in them lies, I am, gentlemen,

Yours very respectfully,

EDW. P. WESTON,
Superintendent of Schools.

SHREWS AND MOLES.

The Shrews are among the least known as well as the smallest of any mammals that inhabit our fields and cultivated lands, spending their life almost wholly concealed beneath the surface of the ground, coming forth only at night in search of their insect prey. In the form of their molar teeth, and in the general quality of their food, they resemble the bats; but in habits are necessarily widely different. The shrews are strictly nocturnal, pursuing their avocations in the night; and being insectivorous in their diet, and possessing a very voracious appetite, destroy large numbers of insects and worms and grubs, that prey upon our crops; consequently we must rank them among the true friends of the agriculturist. In their hatred of the destructive field mice, farmers often fail to distinguish between those depredators upon their products and these inoffensive, useful little animals, which not a little resemble the mice in their form. They may be readily distingushed, however, by the most careless observers, by their elongated heads and pointed noses; the absence (generally) of visible external ears, these members being very short and concealed in the fur; and their shorter, thicker, and finer fur; but more especially by their teeth, which are as different as the food they live upon. The mice are furnished with two long, strong incisive teeth in the front of each jaw, fitted for gnawing hard substances, while the remaining teeth are adapted to grinding. The shrews have the incisive teeth small, and not conspicuous like those of the mice, and the others are sharp-pointed and fitted better for cutting and crushing soft food.

The shrews are not very numerous, though of several species, some of which are the least in size of all mammals; and all being quite small, with their nocturnal habits, we need not wonder they are so little known. In New England we have some seven or eight species, but only three or four are at all common. These are the Broad-nosed Shrew (*Sorex platyrhinus*) very minute, weighing about 40 grains, with a tail about the length of the body; the Cooper's Shrew (S. Cooperi), nearly as small as the preceding; the Forster's Shrew (S. Forsteri), larger with a body nearly three inches in length, and the tail one and two-thirds more; the Mole Shrew, or Short-tailed Shrew (*Blarina talpoides*), which is our largest and most common species, and several others so rare they need not be mentioned.

The Moles are insectivorous, like the shrews, but live more in the ground, feeding upon earthworms and many kinds of insects that fall into or collect in their burrows for shelter. They are much larger than our shrews, and quite differently built, being admirably adapted for their burrowing habits, and are so well known they need not be particularly described. We have but two species, both of which are common; they are the Shrew Mole (*Scalops aquaticus*), and the Star-nosed Mole (*Condylura cristata*). The moles are sometimes complained of for burrowing in gardens and other cultivated grounds, thereby disturbing tender plants by partially uprooting them; but let it

be remembered that at the same time they also destroy many destructive insects. They are also *unjustly* charged with entering potato hills and eating the tubers, it being the common meadow mouse (*Arvicola riparia*) that does this, and not the moles, which have no relish for such food.

These mice often do much mischief in mowing lands by burrowing and cutting off the grass—which misdemeanor is also often charged upon the wholly inoffensive moles.

THOUGTHS ON ECONOMY.

It is thought by many that unnecessary expenditures are beneficial in causing the circulation of capital, just as though the circulation of capital without the production of economization of real value, could be universally productive of the elements of wealth.

Now, a little reflection on some of the principles involved in the science of political economy shows the fallacy of such reasoning. It is, indeed, true, that such expenditures do often tend to enrich certain individuals, but they just as surely tend to impoverish others. Take, for illustration, the article of tobacco, from the importation of which the British government alone derives an annual revenue of $28,000,000! Now, it is admitted by all that tobacco, as generally used, is of no benefit to the consumer, indeed its uses are far overbalanced by its abuses; but overlooking this fact, we see that, unlike food, it does not strengthen and nourish the physical system; neither, like clothing, does it shelter our bodies from the inclemency of the weather, nor like flowers, pictures and other ornaments of similar nature, does it tend to refine and elevate the mind! and develop those spiritual qualities which distinguish the soul of man from the instinctive mind of the brute. In short, it does the consumer no good whatever, and is, in reality, a capital of the most unproductive kind; while food, clothing, &c., are productive capital, whatever benefit may be derived from their use.

Suppose an agriculturist in America raises a quantity of tobacco; it then goes through the hands of the tobacconists and one or more merchants, each adding to the pecuniary —not the intrinsic—value of the weed, by which addition of value each gets pay for time, labor, &c., which he expends on it. The tobacco is then exported, and the net profits, arising from its culture, and from the time, labor, &c., expended on it by the tobacconist and merchant, being so much real gain to the capital of the country. All time and labor below the net profits, cannot be reckoned as a *clear* gain, as they might have been applied with equal advantage in some other department, and are, in reality, so much *capital expended* in its production. The cost of transportation, again, increases the price of tobacco, and then the duties imposed by the government, where it is imported, raises the price still higher, and then, before reaching the consumer, the merchants, through whose hands it goes, put on the "finishing touch." That part of the price which forms the net profits of the European merchant is not lost to the *country* where the tobacco is consumed, although it *is* lost to the consumer. Neither does the country lose the duties collected from it as an import, for government must impose taxes of some kind, for its support; but the consumer pays more than his share of government expenses, provided he consumes other taxable importations equally with the nonconsumer of tobacco. The other portion of the cost, however, is a dead loss both to the consumer himself and the country where it is consumed, the tobacco being no real equivalent for the money thus expended. Not only to the consumer and the country where they are consumed, are all kinds of unproductive capital a dead loss, but also to the world—for the time, labor and capital expended in their production might equally as well be applied to the production of such capital as would be productive. Money, too, paid for unproductive capital, might just as well be given to the persons receiving it, without, as with, the intrinsically valueless remuneration. Or, as far as the economy of the question is concerned, it might as well be stolen in order to keep it in circulation. Tobacco, however, is but a single item in the list of articles composing the unproductive capital of the world, and, unhappily, America has done her full share in their consumption.

What a vast amount of money do we, *even now*, spend simply on show. There is that one little item of imported *flowers for ladies' bonnets*, to say nothing of domestic ones; their cost is greater than that of railroad iron; and wounded soldiers often suffer for want of articles of comfort which such money would help to bring them. In many towns in New England, the consumption of tobacco, in its various forms, exceeds the whole amount paid for taxes on all kinds of property, while there is scarcely a town whose appropriations for educational purposes equals this self-imposed tax.

Nothing can be considered unproductive capital which tends to make men wiser and better, and to elevate humanity in the scale of progress and civilization. Millions are spent annually in dress to satisfy the requisitions of that tyrant of tyrants, fashion, which are really needed in the same department to answer the demands of undepraved taste, and to preserve the health and strength of the physical system.

The principles of political economy were formerly supposed to be involved only in the pecuniary affairs of nations, and this idea is conveyed in the definition which many economists have given to the term,—but it is evident that those principles, like all others, are of "universal application," many of them going beyond mere pecuniary questions, and are applicable in any and every department of life. Economy, combined with perseverance, energy, and industry, is *the* great element of success in every laudable undertaking, a great lever of almost illimitable power to raise humanity to a higher scale of civilization. Economy of time bears the standard of victory up the steep ascent of the hill of knowledge, the few spare moments saved daily from the haunts of idleness and useless pleasure being sufficient

to make any man of medium talents rich in mental wealth. In Napoleon's early days, while in the military academy, some of his fellow-pupils wasted much of their time in a neighboring shop, which he, however, seldom visited. 'Afterwards—I think it was when appointed to the command of the army of Italy—he called at the shop and was recognized by its mistress as the young soldier who had spent so little of his time there. "Ah, Madam," said Napoleon, "had I done so I should not now be in the command of the army of Italy." It was the same great man who afterwards expressed the idea that it was the extra five minutes that saved victories. "Take care of the pence," said Franklin, "and the pounds will take care of themselves." Take care of the spare moments, and you thus save to yourselves years of time otherwise unoccupied. Save up to yourself daily a few of those propositions whose aggregate composes the sum total of all knowledge, and you will at length possess a large share of imperishable wealth of the most productive kind,—productive of happiness and usefulness to yourself and others in this world and in the future.—*N. E. Farmer.*

FIELD OPERATIONS.

OUR SWAMP.

THOUGHT it probable that you might be interested in a chapter on the above mentioned twenty acres of wet ground, inasmuch as it presents many objects of interest to the naturalist.

First, perhaps you would like to know how we came in possession of it. Know, then, that a considerable portion of our domain here at Wallingford, is remarkable for its richness in silica. Sand, in particles of greater or less size, seems to be its sole constituent down to unknown depths. It yields a ready return for manure bountifully bestowed, but inexorably demands rather a large supply of that not over-abundant article. Under these circumstances we were deeply impressed with the necessity of supplying it with vegetable matter. This we hoped would make it more retentive of water as well as manure, so that it would not suffer so much, either from drought or poverty. Casting around to find the nearest available muck deposit, we fixed our attention upon a swamp which is situated about two miles from our home, and succeeded in purchasing the twenty acres in connection with seven acres of upland, at the moderate price of less than seven dollars an acre. It is called the fresh meadows, probably because it was once, (and is still to a small extent,) very smooth and level, and yielded a good swath to the mower. I have been told that in early days men came a distance of several miles to get hay from this meadow.

The twenty acres mentioned are probably not more than a quarter of the whole swamp. The whole taken together is a depression in the landscape with the land descending towards it from all sides except on the west, where a trout brook, sufficient to carry a sawmill, flows right through a narrow valley or gorge in the red-conglomerate rock. It is now mostly covered with trees of a moderate size, and tangled growth of underbrush composed of wild roses, alders, poison sumac, etc. There is one exception, however. On the part we own, there is about an acre of smooth, level ground, in the middle of which there was a pool of water some eight feet across, and four feet deep. It apparently was the last remains of what was formerly a lake, covering the whole surface of what is now the swamp. All our observations and diggings in the swamp seem to point to this theory. To make the muck accessible, it was clear that we must in some way lower the water. Upon examining its outlet, the bed of the stream was found to be rock of a texture not easily penetrated with a pick. However, there was much rubbish choking the outlet, and chiefly through the persevering labors of our friend and energetic brother, J. W. P., (who seems to have been the presiding genius of the swamp for several years,) the outlet was cleared, and the surface of the stream was lowered for a distance of some two hundred rods. This has reduced the general level of the water on our portion about three feet. Our method of proceeding to obtain muck, has been to dig ditches some five feet wide at intervals of eight or ten rods. These, of course, empty into the before mentioned outlet. Our object being to get as much muck as possible, we go as much lower than the general level of the water in the swamp as possible. This we can do by leaving a dam at the mouth-ward end of a short section of the ditch, and going as deep as is convenient to throw out with long handled shovels, or until the water, oozing or breaking in, drives us out. This may average about five feet though I presume that in particular places I have dug down ten feet. Our general practice has been to throw as much muck in summer as our time and supply of labor would admit of piling it on the banks of the ditch; and then, when winter made a firm footing for teams over the soft deposit, drawing it off and applying it to the land, or using it in the stable or manure cellar, as the case may be. The muck, or peat as it is often called, is quite compact, though of a consistency easily penetrated with the shovel, and seems to be composed mostly of small fibres. All through this mass the bark of some succulent roots, which were a fourth of an inch in diameter, standing perpendicular, may be found. The color of the muck below, where the air can reach, is generally yellow, and sometimes a bright straw color. It changes almost instantly to a darker hue when exposed to the air. I frequently came across the shells of seeds the size of coriander. What the depth of the muck is I cannot tell. Mr. P. tells of running a long pole down, and fetching up a kind of

pond mud differing from the muck. The whole shape and texture of the land suggests to my mind the theory that there was once a lake in the place which the muck now occupies, and that there was a gradual accretion of the vegetable matter at the bottom, until it finally quite took the place of the water. Probably the neighboring forests furnished an annual donation of leaves, while the deposit was rapidly increased by the growth of an immense meadow of subaqueous plants. Such a growth of vegetation under water, can be found in great abundance in Quinnepang pond ten or twelve miles east of us. Of course, when this process of filling up had brought the bottom of the pond up near the surface, common swamp grasses would take root and continue the process of elevation above the surface. This period corresponds with that in which our forefathers mowed this natural meadow to feed their cattle till they could clear the forests and make better ones.

The meadow at this stage must be an interesting study to the skilful botanist. It is there that you find the pitcher plant in all its glory with its curious leaf cups full of water. In July, it is decked with two varieties of a most beautiful pink flower, which have a bulbous root. Then again the evergreen cranberry creeps among the grass. It is sparing of berries, however, though now and then you can find them. It is only there that I ever saw a certain tiny moss, with leaves which look like a circular piece of pink paper with a fringe around the border, and a long handle for a stem.

It is interesting to note the period of transition from the condition of meadow to that of brush, bramble and wood. The first step in this transition seems to be the springing up of a coarse kind of moss. It grows right up in the meadow, in the shape of a small hillock or huge ant hill, often over two feet high, and from two to six feet across. This mass of moss is white inside where it is not exposed to the light and purple on the surface. It is in these great moss mattresses, soft as any feather-bed, that the seeds of rose bushes, alders, sumac, and white honey-suckle, the dwarf-laurel, and other bushes are dropped and grow. The fresh meadow apparently was too wet to allow them to germinate previous to the growth of moss. In a little while the moss-bed becomes a mass of tangled roots and covered with verdure. The cranberry vines seem to seek repose on these moss beds. The other day, while collecting a cart load of moss for the purpose of mulching strawberries, I discovered a new variety of cranberry. It had sharp pointed leaves like those of the hemlock as well as greener than the ordinary kind. Moreover the berries had less of the peculiar bitter which detracts from the value of the ordinary kind.

The increase and spread of the roots of trees and bushes, in connection with the lowering of the water level, has given the ground a firmness and consistency, such that in an ordinarily dry time an ox team can walk nearly over that part of the swamp that is cleared, so that it is a practicable thing to draw muck in the summer months.

Last winter we adopted another method of getting muck. The ice made a good foundation for a road over the surface of one of the ditches which was nearly three feet below the general level. We could then dig another ditch beside the old one now transformed into a road throwing the muck directly on to the sled which was down on a lower level, which made the shoveling very convenient.

NIGHT SOIL.

Much of the solid material washed down by rivers is of little value in a commercial sense. And except for the objectionable shallows produced by the settlement of the heavier particles in the immediate vicinity of the mouths of the streams, so as to obstruct navigation, it would be of no practical importance. The muddy Mississippi which discharges about 13,000,000,000,000 cubic feet of water per annum, contains 13,000 solid matter, which would amount to 7,000,000,000 cubic feet; sufficient to cover a square mile to the depth of 250 feet. The Ganges is believed to be equally or more muddy, and there are many other rivers which are conspicuous for the quantities of earthy matter they carry into the sea. But it is only to the portion of fertilizing material thus conveyed that we wish to invite special attention. The Thames, below London, is odorous with the sewerage matters it bears from that metropolis, and there is scarce a stream flowing through a civilized community but is degraded to the occupation of a haut-boy by the adoption along the banks of itself or tributaries of more or less ingenious devices for dissolving and washing away, rather than hoarding up, and rendering useful the nitrogenized material, which, properly applied, would enable the earth to yield the most bountiful harvests.

The manure from the fowl is more valuable than that from the ox, because the fowl feeds on more highly concentrated food, being principally grain and flesh. The food of man, whether from the animal or vegetable kingdom, is generally highly concentrated, containing more nitrogenized matter and inorganic salts than the food upon which most of our domestic animals subsist. Of their comparative value many estimates have been made, and several analyses published; none, however, place it lower than double that of the horse or pig.

It is estimated that nine tenths of this valuable fertilizer is lost to the world, while millions of dollars are annually spent to make up for this waste. The disagreeable odor of night soil is the principal reason for the very general neglect of its importance. Its efficient use is now confined almost entirely to those countries where the need of fertilizers is more seriously felt and their value better appreciated than here. To get rid of the odor, so as to make its use tolerable, is the great desideratum.

One of the best methods of deodorizing night soil without destroying its fertilizing properties, is to mix powdered charcoal with it. We have never learnt the proportions required to render its use as endurable as ordinary stable manure, and cannot speak with any confidence of the economy of this method of preparing it. Peat is, however, quite a powerful

deodorizer, as well as a good manure for most soils, and the treatment of night soil where this swampy product is accessible, must be easy and cheap. We know by experience that it is a powerful deodorizer, and one that every farmer possessing it should use, if only to purify the air of his stables and outhouses.

Night carts may be emptied into an area of suitable size, enclosed by small banks of earth to the depth of about one foot, and the whole covered with peat, several inches thick. After remaining till quite dry, it may be turned over with a spade, and mixed with more peat, when it is ready to be spread on, or plowed into the land. A process substantially similar to this is much practised in Great Britain. The English, however, use common earth instead of peat, commencing the preparation of a heap in early part of summer, and either applying the manure to the land, or getting it under cover in the fall.

We may in a future article advert to the practice of preparing liquid manure, and applying it from a sprinkling cart. In Flanders, where night soil is more systematically preserved than in any other country, it is generally used in a liquid form. In China, on the contrary, where the greatest number of human beings that can be sustained on a given area, is very nearly reached—where the compounding and manufacturing tastes of the people are carried out to such an extent, that even tea is made up into bricks, and very extensively used as money in the trade with the Siberians,—in that country night soil is mixed with clay, and formed into cakes, which, when dried, are sold under the name of "taffo." This manure is much esteemed by the Chinese, and is quite an article of commerce.

Lime is sometimes used to remove the odor from night soil, but it lessens the value of the manure, as it expels the ammonia. Sulphate of iron is an excellent deodorizer, as it fixes the volatile ammonia; and being cheap and readily obtained, is peculiarly valuable for this purpose. The almost inodorous material poudrette, is variously prepared, and of various degrees of value, but this sulphate is very extensively employed in the manufacture of some of the best samples. The great opportunities for fraud in the preparation of poudrette, must always operate against its use; but the general introduction of any cheap and simple process which will make the material valuable to the agriculturist with the application of but a little skill, and avoid the present waste into streams, would produce results of no ordinary importance.

IRRIGATION—ITS OBJECTS AND EFFECTS.

The purpose of irrigation is not only *moistening*, as many farmers think, but chiefly *manuring*, by means of irrigation; dam up a little stream, and make a small ditch along the higher part of a piece of land, so as to cause the water to overflow: in the immediate vicinity of the ditch the grass will grow a great deal longer and faster than at some distance from the ditch where the moistening part had been executed to the same degree as above, showing that the water had left its manure, at the first contact with the surface of the ground. In laying out the ditches for irrigation, make many ditches instead of a single one. There is no loss even by the greatest number of ditches, provided they are put in the right place. The distribution of water and the different modes of arranging the land for irrigation and drainage, depend on the shape of the surface of the ground, &c., and require a very fine judgment, and at least some knowledge of levelling and surveying. The rain water has no manuring effect on the soil, but its greater efficacy is its dissolving quality, by which it makes the manure fit for feeding the vegetables. The water of running streams, led on the land for irrigation, fulfils two important conditions, namely that of yielding manure, and that of dissolving the manure, and is therefore superior to rain water for irrigation. Some have contended that rain water contains a little ammonia, and that it therefore possesses fertilizing properties, but the most refined analysis has failed to prove this.

CLOVER—SAVING THE SEED.

As I have a good many enquiries respecting raising clover, and saving seed from the same, I would take this opportunity of giving my mode of operation. I try to cut the first crop and get it off the last days of June, and not later than the 4th of July. The second crop I save for seed, letting it stand until I think two-thirds at least of the heads are ripe, when I take my reaper, with the platform on, and cut, raking it off in gavils and putting them in rows, so as to save time in gathering. I then let it lay until they get one or two good showers, and soon as dry, having no barns, (and by the way I would prefer to get out the seed out of doors,) I take and make a bottom of rails at least eight inches from the ground—say ten feet wide and forty long, according to the amount of clover—I build the side very square up—if anything a little wider on top—until the last two or three loads, owing to the size of the stack, throwing them in the middle, and to out, good, with coarse prairie hay, or a load or two of cornstalks, bound up and lapped over, so as to make a sure thing of it. This done, I let it stand until the ground freezes and the weather settles. I then take one of BIRDSELL & BROKAW'S Premium Clover Threshers and Hullers, combined, and make short work of it in preparing it for market.

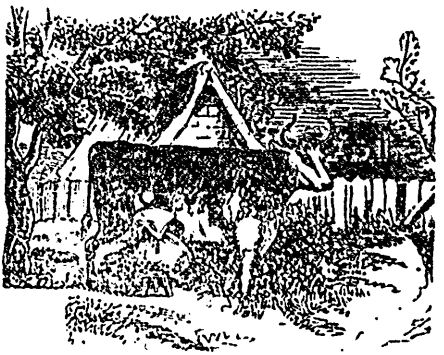
Our yield in this Western country, on an average, is three bushels; I have raised even more. I am sure, as a general thing, our Western farmers do not seed one half enough for the benefit of the land. I know of pieces of land that never get a load of manure or a coat of clover for ten, and sometimes fifteen years, and consider it a poor way of farming. A good crop of clover seed pays me better than a crop of wheat; wheat at 75 cents, and clover at $3, & BROKAW'S machine be seen or got. As I am the Western Agent, any one can get all the desired information by sending a letter to my address, with a stamp enclosed, or by coming to my place, also B. & B.'s advertisement in Rural.

Yours, truly,

HUGH HOLA.

St. Charles, Ill., Nov., 1852.

BREEDERS' DEPARTMENT.



TIGHT BARNS—UNHEALTHY STABLES.

Prof. Simonds, the distinguished veterinarian, in a report to the Royal Agricultural Society on the "Rinderpest," and other epidemics affecting the cattle of Europe, states that he found pleuro-pneumonia very prevalent in some localities, and he was not surprised at this when he saw the condition in which the stock were kept, particularly in the vicinity of Rotterdam, in Holland.

He adds: "The cattle are often crowded into stables so thick, that to pass between them is almost impossible. The form and size of the buildings will frequently only allow of a passage along the centre where the heads of the animals nearly meet over their feeding troughs, while the height of the stable is insufficient to allow a person to stand upright therein.

In many of the sheds or stables there are no windows for the admission of light or air. The heat is almost suffocating, and the stench is abominable. In such unwholesome, pest-breeding places as these are cattle kept, to the number of forty or fifty together, and fed on the waste of distilleries."

It is no matter how they are fed when confined in such stables, disease must be the inevitable result. We say, as we have often said, Farmers, beware of tight barns.—*Ploughman.*

NEW METHOD OF MAKING BUTTER.

This invention is the production of a lady of the name of Whitehead of Whitehead's Grove, who has for some time past turned her attention to the making of butter by the aid of filtration. The process is effected in the following ingenious and scientific manner: A piece of common calico cloth, two feet square, is spread upon an apparatus formed of a series of upright fibres of brass or broom cut to an even surface. The cream is placed upon the calico, and the centre of the apparatus (which has a hinge joint in it,) is then raised so as to form two inclined planes, which can be so regulated that the cream can rest upon them, without running down to their lower edges. In this position the watery particles of the cream become separated from the fatty ones, in the course of from two to four hours, and the residuum left upon the cloth will consist of a concentrated mass resembling cream cheese, which is quite ready for the churning operation.

One advantage of the arrangement above described is that the thinnest creams can be used, as the inclined planes can be made to suit the angle of repose of the cream in proportion to its thickness. The amount of the filtering surface is about one superficial foot of calico to a quart of cream.

The churn consists of a rectilinear box oscillating upon trunions and worked by a crank, which gives an alternate motion to a wooden connecting-rod, attached to a presser or piston which goes quite home to the end of the box at each stroke of the crank, and by the action of which the buttermilk is completely pressed out of the cream, and butter is made in less than three minutes. The piston works horizontally, and by the means of a series of inclined corrugated lines at each end of the churn, air-cells are formed in the butter which thrust it from the end of the churn and force it over the piston in readiness to be carried back to the other end of the churn. In this way five pounds of butter can be produced in a churn less than ten inches square; and from one ounce and a half to two ounces more of butter can be obtained from a quart of cream, than can be obtained by the ordinary mode of churning.

One recommendation of the process is, that the butter can be thoroughly washed and pressed in the machine, so that it need never be touched by the hand. The specific gravity of the butter is also greatly increased by it, and consequently the butter will keep as long without any salt in it as many of our fresh butters do which come to market with a portion of salt in them.

It need hardly be remarked, that the increased weight obtained from every quart of cream by this process will make in the aggregate an increase of many tons in our London market alone; and that the cream obtained from ten cows will yield as much butter to the farmer as he now gets from the cream of eleven cows, independently of the superior quality of the butter, and of its being produced with certainty in so much shorter a space of time than that occupied by the common mode, and with one-tenth of the labor.

RULES FOR MAKING CHEESE.

Rennet.

1. Select a healthy calf for rennet, four or five days old, (four weeks old will do,) kept without food twelve hours before slaughtering, for the secretions of the stomach to accumulate in strength.

2. Empty, but not rinse the stomach, sprinkle it with salt, in three days thoroughly rub with salt, and stretch on a hoop and dry at a moderate heat. Use it when a year or more old.

3. Steep the rennet in a stone jar, a gallon to a rennet, stir often with salt and rub it, always keep more salt than will dissolve, to insure saturation. In three days to a week, the liquid is fit for use, and may be kept bottled in a cold place. Avoid all taint—a frightful source of bad cheese. One gill will do for 30 gallons of milk; or a pint for 25 pounds of

cheese—sometimes, when best, a pint will do for 50 pounds. Stir it before using a portion.

Tools and Vessels.

1. Provide a graduated scale for the tub or vat, so as to measure the quantity of milk readily at any time, by mere inspection. This scale may be made by measuring the vat and calculating its contents; or by pouring in successively a gallon at a time, and marking the height of the surface.

2. *Keep all vessels perfectly and scrupulously clean*—and prevent all ordures from passing near the cheese house.

3. The improved cheese vats give more perfect command of the whole operation, are easier to use, and make more cheese, than the old or common tubs or vats. They consist, essentially, of an oblong tin trough, placed in a larger wooden vat, with a space two inches all around covered with the projecting rim of the tin trough. The two inch space is filled with water, gradually heated, and examined by a thermometer.

Thermometer.

A common thermometer will answer the purpose, if the case be open at the bottom, to facilitate cleaning, and to admit freer contact with milk. It should be accurate (many are not,)and be graduated above the boiling point, so that hot water may be used for washing it.

Dipper.

When the whey is drawn off through the bottom of the vat, there is not much use for a whey dipper. A two quart dipper with a short handle, is most convenient for transferring the curd.

Cheese Cloth.

Thin cloth manufactured for the purpose, and known in market as "cheese bandage," is used for encasing the cheese. It may be colored the desired shade in the piece, so that the cheese may be of a uniform color. Annatto, dissolved in weak lye, is employed for the purpose. To use it, take a strip of cloth long enough to go round the cheese, two or three inches wider than the thickness of the cheese. Sew the ends together and whip the edges with small cotton twine. When completed it should be just large enough to slip over the cheese, and by drawing up the twine to come over the edges of the cheese, top and bottom, say an inch or an inch and a half, according to the size of the cheese.

Hoops.

A. Willard says: "I am inclined to think that the best hoops, for pressing cheese, are from galvanized sheet iron, turned over stout wire at top and bottom. Hoops in common use here are made of iron banded pine staves, painted on the outside. Bent hoops of elm or hickory are also used. A dairy of 30 cows will need hoops of four sizes, an inch difference in diameter—say 17, 18, 19, 20, and perhaps 21 inches in diameter."

Process.

1. Strain the evening's milk directly into the tub; in warm weather cool it down, so as not to sour in the night; either by placing tin coolers with ice, in the milk, or by running cold water in the space surrounding the vat. It may be kept too cold—it should be about 50° or 70°, although cheese makers differ as to the exact temperature. "Many contend that the nearer the milk approximates to souring, without becoming actually sour, during the process of its manufacture into cheese, the larger the quantity and better the quality of the cheese. I believe it is universally conceded among the best dairymen, that by the too free use of ice or cold water about the milk, the evening's milk may be kept too sweet."

2. When the evening's and morning's milk are both ready, place them in the vat well mixed together, and gradually raise the temperature to 88 or 90 degrees (lower in hot weather and higher in cool,) and add, and mix thoroughly, enough rennet to curdle the whole in 40 minutes, which will be about one gill to 30 or 40 gallons. Cover it with a cloth and let it rest an hour. Colder milk will make imperfect and soft curd, and porous cheese. Good curd has a firm consistence, and on raising a portion with the fingers, slits readily apart, or leaves a vacuum behind the finger when passed through it.

8. Cut the whole mass into perpendicular columns with the cutter; let it stand ten minutes, cut it smaller, until about the size of wheat kernels; in a few minutes, if the whey has formed rapidly, dip off a part and apply gentle heat; work the whole mass slowly with the cutter, that all may be alike affected, till in about an hour the heat reaches 100° by the thermometer—let it remain at this temperature one to one and a half hours. Do not use the hands for working the curd; and if, when slightly squeezed in the hand, it is elastic and falls to pieces on opening the hand, the heating has been long enough. Too much or too little is injurious. The whey is now passed rapidly off, through the tin strainer in the corner of the vat, the opposite end being raised to facilitate its flow, and the curd pressed by the hands. Draw the curd back from the strainer, and lift the other end higher, to complete the drainage. When cooled to about 88 degrees, apply salt, ground fine, at the rate of one pound to 40 of cheese, if the cheese is to be used in a month or two; or one pound to 25 or 30, if to remain the whole season. Some apply a less quantity.

Rich curd needs more salt than poor.

4. Place the curd in the hoop while yet warm, (if too warm the cheese will be strong,) and put the whole in press. In a few hours turn and apply fresh cloth, and press till next morning. Let the pressure be moderate at first, and increase it gradually for two days, turning it twice in twenty-four hours, and substituting dry cloths. Some good cheesemakers think 24 hours long enough for the cheese to remain under pressure. When taken from the press to the curing room, oil it with hot whey butter, and let it be thereafter turned, rubbed and greased once in twenty-four hours. The whey butter is made from the cream of the whey by simmering over a slow fire.

Additional particulars.

The caseine of the milk gives the cheese its consistency—the butter, its richness. If there is too much butter, as when cheese is made of cream, it is destitute of firmness—if of skimmed milk, it is too hard, and lacks richness. The whole milk is therefore best.

If the temperature of the milk is much above or much below 88° or 90°, when the rennet is applied, too much of the cream will work off with the whey, and the cream will lose in richness.

If a tin vat cannot be had, the evening's milk may be cooled by pouring it into a tub, and setting tin pails in it filled with ice and water; and it may be in like manner heated the next morning to the proper temperature, by setting in tin pails filled with hot water. The fire should never touch the vessel containing the milk, as a slight scorching will taint and spoil the cheese.

No jarring of the milk should be allowed, even by walking on an unsteady floor, while the milk is curdling, but it should stand perfectly at rest.

The heating of the curd, after it has been cut, is effected by some good cheese makers, who have no vat, by dipping off half or more of the whey, and heating it to about 100° and returning it to the curd—then, after stirring a few minutes, the whey is again dipped off.

The best way to prepare the rennet for use is to soak each rennet in a half gallon of water and then again in another half gallon of fresh water; then put both liquors together, made as salt as can be, and strained and skimmed.

A. L. Fish says, that by adding a gallon of sour whey to enough rennet liquor to curd a hundred pounds of cheese, it increases the effect of the rennet, and prevents cheese puffing without reducing the amount, as when sourness comes from other causes. He uses a gang of knives, set one-fourth of an inch apart, which cuts up the curd at once, by crossing, into square lumps one quarter of an inch square. A gentle motion is required to prevent their sticking together again.

An intelligent correspondent of the Country Gentleman, with the signature of "D," says: —"The process of *pressing* is more important than many suppose. Commencing gradually, I want your *constant* attention for fifteen minutes, when I want the whole weight of the press in use; and any neglect in following it up, is fatal to the best manufactured curd. I speak advisedly on this subject. I know that careless pressing is the cause of much loss, and your own judgment will confirm this statement. *If you leave whey in your cheese, you may be sure it will find its way out*, and, if in warm weather, you will have a worthless, stinking cheese; and even if you do succeed in getting it off your hands, it brings up somewhere, and finally is thrown away, or finds its way to a beer or whiskey-selling groggery, at half price, where bad liquors and worse tobacco have so far vitiated the taste, that nothing but what is rank is palatable."

H. Mills says he gets a better rind in seven days, than otherwise in a month, by placing a cloth at the top and bottom at the time of turning in press, allowing them to remain a week, then taking them off and applying a coat of as warm grease as the hand will bear. Swelling is from a deficiency of salt and scalding. He skims and churns the cream rising during the night.

A dairy, with good cows and good management, will make about 700 lbs. per cow yearly, and each cow will afford about 3 pounds of cheese daily. The size of the cheese, from a given number of cows, may be thus estimated.

DOMESTIC ECONOMY.

HOW TO PRESERVE EGGS.

AS the season approaches when hens are most prolific of eggs, and eggs are plenty and low in price, it is the best time to preserve them for future use—when they are scarce and dear. We offer the following receipts for the benefit of our readers; several of which we have repeatedly tried with perfect success, and found the eggs, after one year's packing, perfectly sound and fit for eating and all culinary purposes.

Nothing was known scientifically on the subject of preserving eggs till Mr. Reaumur was led to take it up. Eggs, after being laid, it was shown, lost daily by transpiration a portion of the matter which they contain, notwithstanding the compact texture of their shell, and of the close tissue of the flexible membrane lining the shell and enveloping the white. When an egg is fresh, it is proverbially full, without any vacancy; and this is a matter of common observation, whether it be broken raw, or when it is either soft or hard boiled. But in all stale eggs, on the contrary, there is always more or less vacancy, in proportion to the loss they have sustained by transpiration; and hence, in order to judge of the freshness of an egg, it is usual to hold it up to the light, when the translucency of the shell makes it appear whether or not there be any vacancy in the upper portion, as well as whether the yolk and white are mingled and turbid by the rotting and bursting of their enveloping membranes.

The transpiration of eggs, besides, is proportioned to the temperature in which they may be placed—cold retarding, and heat promoting the process. Hence, by keeping a fresh laid egg in a cool, dry cellar, of even temperature, they will transpire less and be preserved for a longer period sound, than if they are kept in a warm place or exposed to the sun's light, which has also a great effect in promoting the exhalation of moisture. As, therefore, fermentation and putridity can only take place by communication with the air at a moderate temperature, some means must be devised to exclude such connection by closing the pores of the shell.

The first material which M. Reaumur tried was alcohol varnish, made with shellac, and he says that "it was impossible to distinguish

the varnished eggs, which had been kept for a year, from those newly laid."

It is an indispensable condition of the material used for stopping the pores of the shell of the egg, that it should not be capable of being dissolved by the moisture transpired from the interior, and the varnish fulfilled this condition. But unfortunately, though varnish is not very expensive, it is not a common article in country places where eggs are most abundantly produced, while many people, besides, are not easily brought to make use of anything to which they have not been accustomed.

In order to get over this difficulty, Mr. Reaumur was led to try other substances, and soon found another material very cheap and every where to be had, which would very well supply the place of varnish. The material was fat or grease, such as suet or lard. But the best of these was proved to be a mixture of mutton and beef suet, melted together over a slow fire, and strained through a linen cloth into an earthenware pan. When thoroughly melted, an egg was dipped into it, and immediately taken out again, when it was in a fit state to be kept for months or more. Five lbs. of this fat melted might prepare all the eggs produced in the neighbourhood in one season.

"The chief advantage in the use of this fat, rather than varnish, is that the eggs rubbed over will boil as quickly as if nothing had been done to them—the fat melting off as soon as they touch the hot water; whereas the varnish, not being soluble even in hot water, only becomes moistened by it, and still hanging about the egg, prevents the transpiration of the juices necessary to bring the egg into that state in which it is to be eaten. When the egg, on the other hand, which has been preserved in the fat, is taken out of the water, there remains but little fat upon it, and what there is can easily be wiped off upon a napkin."

The method of preserving eggs by means of fat is greatly preferable to that of varnish, when they are intended for putting under a hen to be hatched, for the fat easily melts away by the heat of the body of the hen, while the varnish remains and impedes the hatching. It is safer, however, to immerse the eggs in hot water not exceeding 100°, and then wipe them carefully with flannel or soft woolen cloth. By this means, and carefully packed in dry sawdust, oats, or almost any other dry, soft substance, if fresh laid, eggs may be carried to a distance and hatched.

In the meanwhile, air should be excluded from the eggs as much as possible. It is best to set them on end, and not to suffer them to lie and roll on their sides. Dry sand or hardwood sawdust is the best for packing. When choice eggs are expected, it is more prudent to have a hen waiting for them, than to let them wait for her. A good sitter may be amused with a few addled or glass eggs, and so be ready to take charge of those of value immediately on their arrival.

There is another method of preserving eggs a long while fresh, depending on very different principles from the preceding, but well worth notice. We are indebted for the discovery, if indeed it can be termed one, to the same ingenious French experimenter, Mr. Reaumur. Having remarked that there was a very great difference among eggs as to the rapidity with which they become unfit for use and putrid, he investigated the cause of this difference, and found that it was the eggs which had not been fecundated or made reproductive by the cock that continue long uncorrupted. In order, therefore, to have eggs to keep fresh from spring to the middle or even the end of winter, it is only necessary to remove the cocks and to deprive the hens of all communication with them for at least a month before the eggs are put away. Without knowing this, people often find among the eggs they buy some which soon spoil and others that will keep for a long time.

Some hens produce eggs with much thicker shells than others. These of course will keep longer than those with thin shells. The eggs from Guinea hens are the hardest, and will keep longer and bear transportation better than any others.

Eggs may be kept any length of time, if the air is perfectly excluded, turned often, and the place of deposit kept at a low temperature. We have tried many experiments to preserve eggs, and have been most successful with lime water. We place the eggs carefully in stone jars in layers, with the small end downward, and then turn on them strong lime water, in which we dissolve two handsful of salt to four gallons of water. If, after standing a few days, a scum or crust should form on the top, we add more water and salt to dilute it, for if too strong it will injure and sometimes spoil the eggs. The jar should be kept in a cool and dry situation. In this way we have kept them good for more than a year. The lime and salt closes the pores of the shell, and the liquid secures them from atmospheric influences.

We have also preserved eggs by packing them as above in fine salt. They kept very well, but we found the salt, after a few months, packed so tight around the eggs that it was difficult to remove them without breaking the shells.

COMMERCIAL REVIEW.

Potash, per cwt.,	$6.20 to 6.25	Wheat, U.C. White, per 60 lbs.,	$0.88 to 0.92
Pearlash, "	6.50 to 6.55	" U.C. Red, "	0.92 to 0.97
Flour, Fine, per 196 lbs.	3.00 to 3.30	Peas, per 66 lbs.,	0.70 to 0.72½
No. 2 Superfine,	3.65 to 3.80	Indian Corn, per 56 lbs.,	0.45 to 0.47
No. 1 "	3.90 to 4.00	Barley, per 50 lbs.,	0.75 to 0.80
Fancy "	4.25 to 4.32	Oats, per 40 lbs.,	0.45 to 0.50
Extra "	4.50 to 4.65	Butter, per lb.,	0.15 to 0.16
S. Extra Superfine	5.00 to 5.15	Cheese, per lb.,	0.07 to 0.08