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LOWER CANADA AGRICULTURIST

MANUFACTURING, COMMERCIAL, AND COLONIZATION INTELLIGENCER ;

OFFICIAL SERIES OF THE AGRICULTURAL BOARD AND SOCIETIES

PUBLISHED UNDER THE DIRECTION OF

M. J. PERRAULT,

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Pupil of the Royal Agricultural College of Cirencester, Gloucestershire, England
and of the Imperial Agricultural School of Grignon, Seine and Oise, France
Member of the Imperial Zoological Society of Paris, &c.*

JULY 1864.



SPARGERE COLLECTA,

OFFICE—TOUPIN'S BUILDINGS, PLACE D'ARMES,
MONTREAL.

AGRICULTURAL REVIEW.

JULY.

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Official Dep't.

THE FLAX CULTURE.

To the Honorable George Brown, Chairman of Committee on Agriculture, &c., &c.

SIR,—In reply to Question No. 8 in a circular issued from your Committee on Flax Culture I have the honor to submit the following remarks:—

First,—That the soil and climate of Canada are admirably adapted to the growth of this valuable plant is clearly shown by the fact that some ten thousand acres are under cultivation this season in the Upper Province.

Col. Mitchell, of the County of Halton, and the Messrs. Perine, County of Waterloo, have over three thousand acres, and the balance is made up in various parts of the Province, east and west of Toronto. In many instances parties who have grown it for years, putting in only two or three acres, have their fifteen or twenty acres this year.

Parties with capital are preparing machinery to fit it for market, and some thirty new scutching mills are going into operation this fall in addition to those already at work; also two large manufactories for spinning and weaving, thereby turning the raw material into manufactured goods fit for home consumption, thus affording a large share of employment to the mechanical and laboring classes, and a saving of twenty per cent. duty on similar goods imported into the country. An article of coarse linen will be offered in the Canadian market in a few weeks from the manufactory of Messrs. Perine Brothers and Company, of Doon Mills, near Galt, which will take the place of the seamless cotton bags

heretofore in such demand among our farmers. Shoe thread, twine, rope, and cordage are already supplied from this establishment, samples of which I beg leave to offer your Committee for inspection.

Secondly,—The quantity of seed necessary to sow an acre is about one and a half bushels. At Norval two bushels have been used, and at St. Mary's only one and a quarter, but it is better in all cases to sow too thick than too thin. The land best suited to the plant is a clay sub-soil with a deep loam; but I have seen it grown in every description of land in Ireland. The proper mode of preparing the land is by ploughing deep in the fall of the year; again in the spring and thoroughly harrowing the ground, passing the roller over before sowing; harrowing again with a light seed harrow; and lastly, rolling to leave the surface as even as possible; the seed may be sown as early as you can get on the land in the spring, and generally comes off before wheat or other crops, being commonly called a ninety days' crop. Riga seed is the best, and will produce fibre from three to four inches longer than any other seed; this, however, is expensive from the costs of importation.

Canadian seed, when well cleansed, seems to answer very well at present when changed from one locality to another.

In Ireland flax seed is never allowed to ripen, and fresh Russian or Dutch seed is sown every year, producing a finer article of fibre fit for the finest qualities of goods, as cambrics, damasks, &c.

The average quantity of seed produced to an acre is twelve bushels; worth last

year \$1.50 per bushel or one bushel may be said to be equal in value to two of spring wheat at current prices and weighing four pounds less to the bushel.

The average quantity of clean scotched fibre is 300 lbs., worth from \$8 to \$10 per 100 lb. according to the quality, shewing a net amount per acre for both seed and fibre of \$48. Many farmers prefer selling out of their stock. When dry and ready for market in this state, with the seed on, it is worth from \$12 to \$15 per ton, and as high as \$18 per ton was paid at the scutching mills last season for superior quality. The quantity produced in this state is from two to three tons per acre. An oil mill will be erected in Toronto this year for the purpose of crushing the land, converting it into linseed oil and oil cake for feeding the cattle. As a further proof of this new and important branch of industry some 38,000 bushels of Canadian growth of seed was delivered at the mills of Messrs. Lymans, Clare & Co., Montreal, last year; and should this season prove favorable, as it has thus far (except perhaps somewhat of late) there will be over fifty thousand acres cultivated next year.

The great secret in producing the finer qualities of fibre that will command the highest price in the market is in the knowledge acquired and practiced of either dew or water rotting. The former practice has been followed generally throughout the Province thus far, and as there is less trouble in following this system, I have generally recommended it: it is accomplished by spreading the flax upon a meadow after the seed is taken off, it is then left for a period of some fourteen or fifteen days, and is judged fit for lifting when, by rubbing a few of the stalks between the fingers, the woody part separates from the fibre freely; while on the grass it requires turning once or twice. When water rotted it will require six or eight days in this stage, according to the heat of the water, but I have known it ready in four days. When this system is followed, which is only done at present at the mills of Col. Mitchell of Norval, it requires only four or five days' exposure on the grass.

Proprietors of either steam or water power saw mills when the timber is exhausted will find that flax culture will come to their aid, for scutching machinery can be easily put into their mills at very little expense with the exception of the breaker for preparing the flax for the

scutcher, the sum of \$800 would put in machinery sufficient to keep from eight to ten hands employed, each scutcher turning out from 80 to 100 lbs. per day of clean scotched flax ready for market. The great difference in the price of flax in Ireland and other flax growing countries where prices range from £50 to £200 stg. per ton, is evidence of the skill attained in producing the finer qualities.

It is quite common for farmers to get from £30 to £40 stg., per acre for flax on the ground before it is pulled. Surely this should be a strong inducement for the Canadian farmer to give it a fair trial when he has his land free from rent, and with trifling taxes comparatively. I have seen as fine a quality of fibre and as much to the acre in the township of Blanchard Co., Perth, as ever grew on any acre of land in Ireland.

Lastly,—You ask is flax an exhausting crop. I reply not more so than barley or fall wheat: it is expected that a farmer will put his flax crop into ground well prepared and which may have yielded a root crop the year before; or, where they have not ground so prepared, let them dress it with a few extra loads of manure, but this should be invariably done the year before.

In conclusion, I have only to urge that too much attention cannot be given to this new branch of agriculture. In the State of New York, in the midst of all their distractions arising out of the civil war, they have in that State alone appropriated the sum of \$20,000 for the encouragement of flax culture; and at present they offer the best market we have for the qualities we at present produce in Canada.

We ought to produce a large quantity of superior quality for exportation; and no doubt, with a little more experience, we will do so, the prospects being now most promising.

But one of the chief reasons, if not the best that can be brought forward to induce the farmer to turn his attention to this crop, is that it is not liable to the ravages of the weevil midge or fly as wheat is, nor will frost injure it to any extent.

Other advantages might be enumerated, but at present I content myself with placing these remarks before you, trusting they may meet with due consideration from your Committee. I have the honor to be, Sir,

Your obedient servant,

JOHN A. DONALDSON.

Quebec, 13th June, 1864.

J. F. Leprohon, Esq.

SIR,—I have to acknowledge the receipt of your letter of to-day with a series of questions, to which I have the honor of submitting the following answers for the information of the select Committee appointed by the Legislative Assembly to enquire as to the possibility of cultivating the vine in this country :

1st. I have observed that the cultivation of the wild vine as practiced by Mr. DeCourtenay, has had the effect of increasing the quantity and size of the grapes to an extent that I could not have believed possible if I had not witnessed it ; and having closely observed the system adopted by that gentleman, I am persuaded that the success of the vine culture depends altogether upon the perfect knowledge of the art of pruning and training.

2nd. I have, in two different instances, been a witness of the beneficial effects of his system applied to the cultivation of delicate French vines. One, the "*munier*," is a vine that had stood in the garden of a friend for many years without ever producing fruit in any quantity and that imperfectly formed and unripe. The summer after its being pruned and trained by Mr. DeCourtenay's vine dresser, there was an extraordinary large quantity of beautifully developed ripe fruit.

The second was the "*Chasselas Doré*" cultivated in the open air and bearing magnificent bunches of fully-developed grapes.

3rd. I have examined the manufacture of wine by Mr. DeCourtenay from grapes grown in the open air, which I assisted in gathering, and have no hesitation in expressing my firm conviction that if the cultivation of the vine and the manufacture of the wine as practiced by that gentleman was extensively prosecuted, would be attended by such results, both moral and commercial, as would be of immeasurable benefit to the country.

Having been for many years engaged in the wine trade, I am able to affirm that the wine so produced is such as would be of high marketable value in any country.

4th. I am satisfied that a government subsidy to an intelligent and respectable company who would undertake in the two sections of the Province to develop this important industry would be attended with inevitable success. I have the honor to be, Sir,

Your very obedient servant,

W. J. BICKELL.

Quebec, 13th June, 1864.

J. M. LeMoine, Esq., Spencer Grange near Quebec.

Question 1. Have you observed the practical results obtained by Mr. DeCourtenay in the cultivation of the wild vine in the district of Quebec ?

2. Are you aware that Mr. DeCourtenay has made wine from the cultivated wild grapes of the district of Quebec, and what is your opinion thereof ?

3. Are you of opinion that the assistance of government would have the effect of developing this industry in a manner advantageous to the country ?

Answers to the questions submitted to J. M. LeMoine, Esq.

1st. The cultivation of the grape in Canada both under glass and in the open air, has engaged my attention for several years past, possessing, as I do, very extensive graperies, at Spencer Wood. I have been struck with the very satisfactory results obtained by Mr. DeCourtenay, from the outdoor culture of the wild grape at St. Albans, on the St. Louis road near Quebec. Vines barren or next thing to it in two years' culture, were soon loaded with immense clusters of splendid fruit.

2nd and 3rd. Mr. DeCourtenay submitted to me during the last winter very delicious wine from some grapes, which, he stated, had been grown in this district. I saw the grapes during several periods of fermentation, and I firmly believe that such wine produced in large quantities would be an inestimable boon to Canada.

4th. I think that government would be found wanting in its duty towards the people, if it shall refuse to encourage the development of such an important element of commercial prosperity.

I see no reason why the wild vine of the country should not improve under proper culture, and other varieties of vines introduced in Canada, sympathetic with the climate and soil.

It is useless for me to dwell on the bearing of the vine question in Canada. I do not believe that it has been fairly tried yet. There are secrets in the manufacture of wine, as there are in all other industries, and failures can be explained by the fact that few if any real vine growers have attempted to make wine in Canada with the wild grape of the country cultivated in the open air. I think I echo public opinion in urging the necessity of having the wine question thoroughly ventilated.

J. M. LEMOINE.

Quebec, 14th June, 1864.

J. F. Leprohon, Esq., the Secretary of the Parliamentary Committee on Wine.

Sir,—I have the honor to acknowledge your communications propounding certain questions in relation to Mr. DeCourtenay's success in the cultivation of the vine, and in producing wine from the fruit. I subjoin my reply.

Question 1. In the fall of the year 1861 I went to examine some wild vines, then about to be taken into cultivation by Mr. DeCourtenay. The plants were of considerable age, and had been growing for several years where they stood. They had several branches of fruit, scarcely any of the grapes being larger than the head of a common pin.

Late in the spring of 1862 I again visited the same vines, still standing on the same exact spot. They had been pruned with a very unsparing hand, and showed a very handsome promise of fruit that year. The cause of this last visit was a very severe and unseasonable frost, and I went to see the effect produced on the vines. They were in very full blossom, but, though icicles were still hanging on some parts of the vines, they had suffered nothing. I again visited the same vines in September, 1862, when they were loaded with bunches of grapes highly colored, and the grapes, individually, as large as I have seen them in the wine-growing parts of France. I had the curiosity to watch the gathering, and the making of those grapes into wine, which wine would have been pronounced good in any wine-growing country. In 1863 I again watched the making and fermentation of Mr. DeCourtenay's wine, and I kept two bottles of it till the spring of 1864: it proved of superior quality.

Question 2. I consider it highly desirable for Canada, in which country I have now resided 43 years, that the fostering hand of the Government should be extended to encourage the cultivation of the vine, and thus produce the inevitable result of a new, a very extended, and a very beneficial national industry.

I have the honor to be, Sir,

Your very obedient servant,

R. B. JOHNSON.

Quebec, 13th June, 1864.

To J. F. Leprohon, Esq., Clerk of Committee, Legislative Assembly.

Sir,—In answer to your communication of the 13th inst., I beg leave to return for the information of the select Committee

upon vine culture the following answers to questions which they have done me the honor to propose—and have the honor

To remain, Sir,

Your obedient humble servant,

W. P. DECOURTENAY.

Quebec, 14th of June, 1864.

Answers.

1st Question. In March, 1863, I published a pamphlet upon "The Culture of the Vine, and Emigration" which I forward for the information of the Honorable Committee, hoping it may prove that since the publication of the sessional papers, alluded to, of 1860, No. 22, "I have demonstrated in a practical manner the corrections of my views."

In the first instance:—

By cultivating successfully, not only the wild vine of the country (now so fully appreciated in Europe), but moreover several delicate varieties of European vines, and proved that they may adapt themselves without difficulty to the vigor of this climate.

And in the second instance by the manufacture of good sound qualities of wine from the produce of the above-mentioned cultivation.

I must now beg leave to call the attention of the Honorable Committee to the happy results obtained in Canada West by the indefatigable exertions of my much esteemed friend, Mr. Henry Parker, of Clair House; from whom I beg leave to present a letter containing facts of such importance as to render any further observations of my own upon question No. 1 altogether unnecessary.

I can not, however, refrain from expressing my conviction of the incalculable services rendered to Canada West by the energy and perseverance of Mr. Parker in bringing to a successful issue so great an enterprise, and which will one day render his name a "household word" upon this continent.

At the same time I beg leave to forward for the information of the Committee, a statement I have just received from Paris of the proceedings of the agricultural delegates of Europe there assembled, by which it will be seen that experiments upon a large scale and in numerous localities have satisfied the learned delegates.

"That a general introduction of the north American vines, would be of the greatest advantage to the wine-growing interests of Europe.

"It being demonstrated that not only the productions are superior both in quality and quantity to that of the European markets, but also that its hardy qualities have permitted the extension of that important culture even to the shores of the Baltic."

Particularly favorable mention is there made of the Clinton varieties of which the vineyards of Clair House are composed.

2nd. I think the best answer to this question will be found in my thoughts upon the culture of the vine :

Chapter second, "the Wealth of Heat."

3. In answer to this question I must again refer the Honorable Committee to my pamphlet, pages 15, 37, 47, 48 and 53, and conclude with the Count de Gasperin's estimate of a wine climate, which must naturally carry with it more conviction than any argument I can offer.

"In considering many pages of statistics taken from the delegates of wine associations, Cours d'Agriculture, vol. 4, page 637, he remarks this same operation made on a series of years from 1862 to our day, gives us the same result.

"Thus we can conclude that climates most favorable are those where the duration of the season of vegetation are the shortest, and where in such season the total heat is the most elevated.

"Where the difference between the solar heat and the minimum heat is the greatest, and where consequently vegetation proceeds by shocks, and not by a uniform march.

This description of our own climate by DeGasperin needs no comment.

4th. The Count de Gasperin in his "Cours d'Agriculture," vol. 4, pages 616, 617 and 618, has demonstrated that the success of wine culture "must depend altogether upon the judicious choice and combination of plants, chemical analysis not being able to indicate qualities.

"It is therefore to agricultural experience alone that we must address ourselves for the knowledge required."

Such is the reason why, in my opinion, private enterprises should not be expected to sustain the expenses of agricultural experience, which can by no means remain a privilege, but which, from its nature, inevitably belongs to the public domain.

W. P. DECOURTENAY.

QUEBEC, 15th June, 1864.

In answer to the questions of the Honorable Committee desiring to know the certain, or, in other words, (as I read it) the minimum produce, our company (under pain of receiving no bounty) would supply from 1864 to 1871 inclusive, together with the amount of bounty per gallon, we solicit in place of the fixed subsidy already spoken of, also the number of acres of vineyards requisite, as compensation to the Province for the assistance and encouragement obtained. I beg leave most respectfully to submit that I am of opinion we might undertake to carry out our conditions contained in the following scale :—

Acres.	Year.	Gal. min.	Bounty per gallon.	In dolrs.
25	1864	1000	One pound currency	\$4.000
35	1865	2000	" "	8.000
50	1866	20000	Half a dollar	10.000
100	1867	40000	Twenty cents	8.000
150	1868	50000	" "	10.000
200	1869	100000	Ten cents	10.000
200	1870	"	"	10.000
200	1871	"	"	10.000
Total.....				\$70.000

No bounty to be paid unless the minimum of acres and of production was upheld, and after the second year, only ten cents a gallon allowed for every gallon above the minimum.

Extracts from attested accounts must show the expenses to exceed the amount of bounty granted the previous year.

I beg leave most respectfully to submit that if the Honorable Committee from their personal knowledge of facts relating to the case, or from conviction produced by the evidence laid before them, are satisfied that we shall faithfully carry out our engagements and endow the Province with so extremely important an industry. They will undoubtedly, upon consideration, recommend the purchase of wine, for reason even of economy—properly so called.

In conclusion I beg leave to submit that the effect on emigration produced by a subsidy for the cultivation of wine would be important and immediate.


It would speak more to the European mind in favor of Canada than every possible act of the Government, in that direction, combined.

And I have the honor to remain,
Most respectfully,

W. P. DECOURTENAY.

EDITORIAL DEPARTMENT.

ONE WAY TO IMPROVE A FARM.

 HERE are many farmers who really have a wish to improve the appearance and increase the productiveness of their farms, to raise better stock, to make better fences and buildings—in short, to inaugurate a general improvement in their farm operations, but who, with this desire strong in their thoughts, nevertheless go on from year to year without accomplishing it. The reason given for the failure to do what is so much in their minds and purpose, is that they are not able.

Now we agree that capital is very useful and very necessary in farm management, that great improvements cannot be quickly and thoroughly made without its employment, and that when judiciously expended in this mode, it usually brings good returns. But it is also true that important improvements may be made without any large expenditure of capital—good management, industry and perseverance, proving in many instances, quite as effective agencies as money in producing satisfactory results.

It happens—whether unfortunately or otherwise, we will not undertake to determine—that in this country a large majority of the farmers are not capitalists in the usual sense of that term. Their capital consists in industry, health, and ability to labor, and it only needs that this labor be applied in an intelligent manner, under the guidance of an enlightened judgment, to produce results more satisfactory even than those generally produced by a large expenditure of money in farm operations.

Some of the best farmers within the range of our acquaintance have accomplished important improvements in the mode indicated above. They have not at once given to their possessions that beauty and that condition which they desired to attain; nor have they been able to drain extensively, to purchase blood stock at high prices, to produce premium crops, or to do many other things which was always among the acknowledged evidences of good farming. But they have adopted the rule of doing all things well, and this in process of time, leads to high farming and to valuable improvements.

If such a farmer has occasion to renew or rebuild his fences, he will put them in the right place and in straight lines; if he

plows a field, he is sure to cut straight and deep furrows; if he puts in a crop, he recognizes and acts upon the principle, that thorough tillage always produces at a cheaper rate per bushel; if he raises farm stock, he will use care in the selection of breeding animals; and if he cannot purchase improved ones, he will manage to get the services of males of pure breeds, or as near that as possible, and continue to breed toward purity, always selecting the best within his reach, until the desired end is attained. He will fully carry into practice the principle, that grass and grain are as cheaply raised as weeds, and will keep his fields clear of noxious plants injurious to the crops.

These simple rules, which in general terms may be expressed as “doing things in the best possible manner with the means at command,” will, in a marvellously short period, transform a farm from a state of dilapidation and unproductiveness, to one of superior management and value. We sometimes witness extraordinary improvements under judicious or even injudicious use of capital; but our observation and extensive acquaintance among farmers go to prove that not only the greater number, but by far the most useful and valuable changes in the condition of the farms in this country are produced by the mode suggested in this article.

There can be no doubt whatever of the practicability of producing great improvements in the manner proposed. Any person, we care not how bad the condition of his premises, who will adopt such a system, and pursue it unflinchingly, will find himself in ten years a *model farmer*. He cannot avoid such a result under the plan proposed: and many a man has found himself famous as the proprietor of an improved farm who, at the beginning, mourned the lack of capital as a complete bar to such a consummation. It is the philosopher's stone which turns everything, if not into gold, at least to good account, and places within the reach of every farmer, large or small, the key to the most valuable improvements.

We do not write to discourage the use of capital in farming, for we believe that in *judicious hands*—a condition too often wanting—it will pay; but rather to suggest a method by which the lack of capital

may be overcome, and success attained by every man who has a farm to cultivate.—*Maine Farmer.*

SOBRIETY AMONG FARMERS.

LET there be no lack of sociability among our friends in the rural districts, for success in farming may be greatly promoted by friendly intercourse. Throw off all coldness and formalities, and visit each other as often as your time will permit, and talk over matters connected with your pursuits in a true spirit of kindness and friendship. The loss in a farming community where there are no social visits, cannot be estimated in dollars and cents; for not only does the lack of exchanging of general information pertaining to agricultural pursuits, greatly impede successful farming; but there is a loss of intellectual, moral and social wealth, that cannot be computed, and when lost can never be recovered again.

If your neighbor succeeds better than yourself in producing any crop, do not feel that you are humbling yourself to learn of him his means of success. We cannot be independent creatures if we try, for we are of a necessity so linked together that the labor of one man is for the benefit of hundreds of others. If we by experiment make any discovery that is truly valuable, we should give our neighbors the benefit of it. Wherever a community have formed the habit of frequent and friendly visiting, there you are sure to find an intellectual, social, and prosperous people.

DEATH OF DR. EVAN PUGH.

THE death of this gentleman, the distinguished President of the Pennsylvania Agricultural College, is announced, and although we were not acquainted with him—only by correspondence—yet in his death, while knowing it to be a great public loss, we also feel to be a personal one, for his letters were always written in a kindly manner, and we felt a strong attachment to their author. The following appreciative tribute to his memory, is from the *Country Gentleman* of the 12th inst:

“Dr. Pugh was devoted, most earnestly, to the cause of Agricultural Education. We had long known him by correspondence, but only met him personally once—at Rothamsted, England, in 1859, where he was employed for some time in pursuing his

studies and carrying on various important investigations, not only as assistant to Mr. Lawes and Dr. Gilbert, but also those instituted and conducted by himself. He was wholly a self-made man, having as a teacher at home economized sufficiently to enable him to spend several years abroad in securing a thorough scientific education, both in Germany and England. His aim in this was mainly if not solely, to fit himself to carry on the work upon which he entered immediately on his return in 1860—the management of a high school or college for the education of farmers' sons. He was indefatigable and self-denying in study and effort; and had an unflinching confidence in the practicability of adapting such an institution to the wants of those for whose benefit it should be established, and whose progress in intelligence and in skillful practice, it was the highest end of his life to promote.

He has been taken away just as success seemed dawning before him. His place, we might almost say, it will be impossible to fill. We had hoped that he might be an acknowledged leader (as indeed he was so far as he had gone) in solving the great problems of the course of instruction best suited to fit our farmers for their pursuit, and of the wildest and most effective application of science to the demands and duties of the practical cultivator. Cautious in his conclusions; earnest and painstaking in whatever he undertook; conscientiously fearful of wrong, and antagonistic to deceit and humbug; possessing a mind marked by solidity of acquirement and soundness of judgment, rather than by peculiar brilliancy of specious polish; warmly interested in the branch of science, to secure the mastery of which he had exerted himself so long and zealously; qualified in a high degree for the control and instruction of the young; undaunted by the difficulties which try the faith and quell the courage of most men—he had before him a career second to that of no one associated in name and labors with the progress of American Agriculture, and his untimely death is a loss, not to the farmers of Pennsylvania only, but to those of the whole country, and to the friends of agricultural education in every State.”

The farmers of the country are the dependence of the nation at all times—the bulwark of supplies, in both peace and war. If they fail, the “main spoke” is gone.

VERMONT AGRICULTURAL COLLEGE.

THE Burlington Press states that the Governor and Commissioners intrusted with the care and disposal of the land scrip for the Vermont Agricultural College, have effected a sale of something over one-half of the scrip, a portion at eighty cents per acre and the remainder at eighty-two, realizing upward of \$60,000, which has been invested in Vermont State sixes. If the remainder of the scrip can be disposed of as well, which is a matter of some doubt, a fund of \$120,000 will be realized for the purpose of the grant.

SCIENCE IN AGRICULTURE.

SCIENCE, says Macaulay, has lengthened life, mitigated pain, extinguished diseases, increased the fertility of the soil, given new securities to the mariner, furnished new arms to the warrior, spanned great rivers and estuaries with bridges of form unknown to our fathers, guided the thunderbolt innocuously from heaven to earth, lighted up the night with the splendor of the day, extended the range of human vision, multiplied the power of human muscles, accelerated motion, annihilated distance, facilitated intercourse; correspondence, all friendly offices, all despatch of business, enabled man to descend to the depths of the sea, to soar into the air, to penetrate securely into the noxious recesses of the earth, to traverse the land in cars which whirl along without horses, and the ocean in ships which run ten knots an hour against the wind. These are but a part of its fruits and of its first fruits; for it is a philosophy which never rests, which has never attained, which is never perfect. Its law is progress. A point which yesterday was invisible, is its goal today, and will be its starting point tomorrow.

Such is the province and such are some of the prerogatives of science. It would seem, therefore, that none could fail to see the importance of science in the great work of promoting the art of agriculture; so that labor and capital, employed thereby, and invested therein, shall be made more remunerative. Let the farmer's attention be directed to the different facts and varying and ever-varying phenomena that occur under his observation and within the province of his experience during the processes of cultivation. In this way he may obtain accurate knowledge of the state of the soil,

and become intelligibly acquainted with the history of the growth of plants, and of their maturity.

Observation and reflection, says Liebig, (and we would add experience), are the fundamental conditions of all progress in natural science; and agriculture presents, in this regard, ample room for discoveries. What must be the feelings of happiness and contentment of the man who, by skilfully turning to proper account his intimate knowledge of the peculiarities of his land, has succeeded, without increased application of labor or capital, in gaining from it a permanent increase of produce? For such a result is not only a personal advantage to himself, but a most important benefit conferred upon mankind.

How paltry and insignificant do all our discoveries and inventions appear, compared to what is in the power of the agriculturist to achieve? All our advances in art and science seem of little avail as it regards the diminishing of the infelicities of human existence; and though a fraction of society may thus be gainers in material and intellectual enjoyment, the load of misery weighing down, and either depressing or oppressing the masses, remains unlifted. A hungry man is benefitted little by preaching; and a child clad in rags and filth, with an empty stomach, learns little, though he is sent to school. Every step in advance made by agriculture, however, serves to alleviate the sufferings and to alleviate the sorrows of mankind, and thus to make the human mind susceptible and capable of appreciating the good and the beautiful that science and art present to us. Improvements in agriculture constitute the only solid foundation for future and further progress in all departments of human knowledge.

In these views of the learned chemist we most fully concur; and we hope that the efforts now earnestly making for the promotion of agricultural education throughout our Commonwealth and the country, shall serve to develop and diffuse useful knowledge among that class whose hands are hardened by daily toil. Careful observation and experience, as already stated, furnish the conditions for reflection which shall advance science and promote art as they stand related to agriculture.

Oats should be cut when the straw has about two-thirds turned yellow, and lie in the swarth until dry enough to bind.

THE FARMER'S PAPER.

ON the course of his remarks at the complimentary dinner and presentation to Sandford Howard, Esq., Dr. Geo. B. Loring paid the following compliment to the editors of the agricultural press, while speaking of its agency in the improvement of our husbandry:

"The farmer's newspaper is, in our country, almost the sole guide of the farmer's labor. It has thus far performed the part of college and teacher. It constitutes a large portion of the literature of that profession which all men love, and upon which all men depend directly or indirectly for their subsistence. There is, in its pages, a common ground, where all conflict ends, a platform upon which all can stand, a creed which all can believe; and who does not know the reward and praise and satisfaction with which the unhappy voyager across the stormy surface of a partizan press, finds repose in these columns, which reminds him of the calm and steady and luxuriant promises of nature—of growing crops, and of animals devoted to the "service of man?" and more, who does not know that whatever progress has been made in agriculture has received its stimulus and direction from these same columns. By suggestion, by investigation, by records of experiments, by statements of successes, has the agricultural newspaper press of our day kept the agricultural mind stimulated and informed. When larger and more ambitious designs accomplish in a more imposing manner what the agricultural editor is quietly doing every week, we shall be sure that something positive is done in the way of agricultural education.—*Maine Farmer.*

CHEESE FACTORIES.

AT a late meeting of cheese-factory manufacturers in Rome, N. Y., the following interesting statements were made concerning that business, which cannot fail to interest all who are working cheese-factories this season for the first time. The number of pounds of milk required to make a pound of cheese, is stated at 10 11-50, two 10½ each, 10 1-10, 9½, and 8 7-10,—thus varying about 2½ lbs. in the quantity of milk requisite for making a pound of cured cheese. This answers as well as can be done at present, perhaps, the inquiry put to us, "How many pounds of milk does it require to make a pound of cheese?" We hope the operators of cheese-

factories throughout New England will keep an exact record of every item of expense, and also of the quantity of milk required to make a pound of marketable cheese, and report for the *Boston Cultivator*:—

Alfred Buck's factory, Vernon, Oneida Co.—Number of cows, 370, for 6 months; 10 1-10 lbs. of milk make 1 lb. of dry cheese; cheese sold for 13c. per lb.; the cost of boxes, bandages, salt, &c., 40½c. for 100 lbs. price charged for making cheese, \$1 per 100 lbs., making the whole cost, \$1.40½c.

Williams, Adams & Dewey's factory, Hampton, Oneida Co.—Number of cows, 350; milk, 976,379 lbs.; of cured cheese, 95,959 lbs.; sold for \$12,279.73; 10 lbs. 2 oz. of milk made 1 lb. of cheese; price of making cheese, at \$1 per 100 lbs., \$959.59; incidental expenses, \$388.93; total, \$1,346.51.

Whitesboro' factory, Oneida Co.—Number of cows, 850; 8 months' milking; milk, 2,122,855 lbs.; cheese, 207,313 lbs.; sold for 12 22-25c. per lb. 30 cords of wood used, costing \$90; 3 tons of coal, costing \$34. Expense of bandage, salt, boxes, &c., 45c. per 100 lbs.; shrinkage of cheese, 4 per cent.

Clark's factory, Vernon, Oneida Co.—Of milk, 955,915 lbs., for 4 months; of green cheese, 107,083 lbs.; 10 lbs. 2 oz. of milk for 1 lb. of cured cheese; expense of boxes, &c., 40c. per 100 lbs. cheese.

Miller's factory, Constableville, Lewis Co.—290 cows; 971,515 lbs. of milk; 100,089 lbs. of cured cheese. Net sales of cheese, \$11,011.64; 8 7-10 lbs of milk for 1 lb. of cured cheese; the amount of shrinkage was 6 17-100 per cwt.

Deerfield and Marcy factory, Oneida Co.—700 cows; 1,949,215 lbs. of milk; 193,335 lbs. of cheese; cheese sold for 14 611-1000c. per lb., delivered in Utica.

Lowville factory, Lewis Co.—600 cows; 1,863,934 lbs. of milk; 172,162 lbs. of dry cheese; shrinkage 8,754 lbs.; cheese sold for 13 7-10c. per lb.; cost of bandage, boxes, &c., 43c.

Georgetown factory, Madison Co.—435 cows; 1,538,204 lbs. of milk; 156,911 lbs. of cheese; 9½ lbs. of milk for 1 lb. of cheese; shrinkage 3½ per cent; cheese sold for 12½c. per lb.

For squash bugs, wood ashes sprinkled upon the plants in the evening or just before a rain will prove an effectual remedy.

PROFITS OF FARMING.

FARMING is quite a sure way of getting a fair kind of a living, but lately it is attempted to show that it is a sure way of getting rich. Statements of products and the cost of raising them, often appear with such a marvellous balance in favor of the producer, that many people have come to believe that a perfect El Dorado lies in the farm. A man has a favorite field of five acres, and after devoting his energies for years to its improvement—putting on it all or nearly all the manures his farm had made, and all the fertilizers he had bought,—raises therefrom a large crop. Whereupon he sets him down, and sends to the newspaper a statement of the yield of those five acres, and the cost of that year's tillage, and the profit appears massive.

Howbeit, he says nought of the expenses on that field in former years, and particularly is silent about the products of the rest of his farm of 150 acres, impoverished for the benefit of the beloved field perhaps,—or of 20 or 30 acres of cold, swampy, sour pasture, a stranger to manure or the plow,—of acres of light soils that white beans would famish on,—of undrained meadows and bush-growing ranges, not a word. The writer knows of such a case. In sight of him is a splendid field of about four acres, which twelve years was rock-bound and unkind. It cost the owner \$400 to dig, blast and burn out the rocks and remove them. He put all the manure his farm made in a year on it every third year, and now the lot is fair to look upon. This year he will get a large crop of corn from it, and if he should send in a statement of this year's crop alone, would it not lead persons to an unfair conclusion on the profits of farming.

Gentlemen, let us have a fair statement, not of what you did in the field, but on the farm. Don't give one calf all the milk, and let the rest stare at you through the fence; if you do, don't trot out that prodigy, and leave the others behind.

How far out of the way as a general fact, is the following statement: Suppose the farm worth \$10,000. Interest on that which must come out of the land, \$700. Farmer's own time, if worth anything, \$500—his wife's labor, keeping things as should be, \$300. Keeping fences, carts, wagons, all implements, horses shod, chains mended, buildings repaired, taxes paid, and

everything in shape, \$300 at least. Extra help and board, (unless you have two stalwart sons who "put in," and a couple of daughters who are not afraid of dish-water and washing-day,) \$500. Liabilities to fail (for stock will die, and crops are sometimes poor) must be charged at least at 3 per cent., (no insurance company would take so great a risk at 20,) \$300. Clothes and board for family, \$400. In all \$3,000. This must come off the farm to make both ends meet. The rest is profit. One third the price of the land must be laid out in working it. Are the farms plenty that can sell grain and stock, and butter and cheese yearly, to one-third of their value.

But if the money was at interest, the owner would receive \$700 for that; if he worked as he did farming, and his family all worked for wages, (for the child that feeds the chickens, and the boy that fetches the cows earn something,) he would buy his food and raiment and clear \$300 beside which would make \$1,000 yearly profit, or 10 per cent. Do many farmers, taking from their profits the values of their own labor, clear 10 per cent? SELMA.

SOME THOUGHTS ON THE EDUCATION THAT FARMERS NEED.



FARMER should be educated for that particular pursuit or profession they are to occupy; and that knowledge which shall best fit them to be useful in that profession or pursuit, is the knowledge they most need. It follows that the education of the farmer should be a practical one.

Knowledge, or education, may very properly be ranged into two separate classes, theoretical and practical. That is of more worth which is obtained by actual practice; although both are alike useful and important in all the pursuits of life. It is essential that a good lawyer or physician should be well acquainted with the theory of their several professions; but their success depends, in a great measure, upon the amount of practical skill and knowledge which each possesses. A physician may understand very correctly the manner of amputating a limb, as he has obtained it from his books, but his success in performing the operation depends upon practice. The larger the experience, the more skilful and perfect the work.

A farmer, we say, needs a knowledge of chemistry, of geology, of animal physi-

ology, of botany, of entomology, and other sciences; but these sciences alone can never make a farmer. They will, to a great extent, assist his labors, and lead him to work more understandingly. On the other hand, a man who has had sufficient practice, may become a very good farmer, though he knows not the botanical name of a single plant upon his farm, nor the difference between mica and quartz.

There are many good farmers who read no agricultural books or papers, and who are unacquainted with the simplest scientific term; yet they manage their farms in accordance with correct principles, because those principles are founded upon the results of their own careful observation and practice. We do not say they would not become more thorough and efficient,—that their practice would be better and their returns greater—did they give more attention to the study of those sciences underlying their profession. Very often we see clergymen, not having received the advantages of a liberal education, who do a great amount of good in the world. We do not say they would not have been *more* useful had they received such advantages.

The sciences aid the farmer in the more skillful practice of his work; and it is a thorough and intelligent practice, united with a knowledge of the natural sciences, (acquainting him with the elements with which he has to do) that will make the most complete farmer. To enforce this principle of the union of practice with science as applied to the pursuit of farming, we borrow an illustration—not using the exact language—from the address of the Hon. Jos. R. Williams, at the dedication of the Agricultural College of Michigan, at Lansing, May 13th, 1857. The sailor before the mast performs all the work connected with the machinery of his ship with the most perfect ease. In the midst of a tempest, or in the darkness of midnight, he reefs the sail with coolness, and is regardless of danger. Is he a perfect sailor? Far from it. Diligent and thoughtful students are silently at work in the observatories at Washington and London, preparing the nautical almanac. Charts and maps showing the reefs, coasts, and shoals, are prepared for his use. By the help which science has rendered, the mariner can indicate upon the trackless ocean his exact position. Is the deep scholar, who passes his time in the observatories, and from whose calculations the ship is worked, the

perfect sailor? By no means! But he who unites the highest practical aptness and skill in working the ship, with the scientific penetration that enables him to use all the deductions of nautical science—he is the perfect sailor! Hence the complete union of principles and practice makes the sailor. Science has not done less for the farmer than for the mariner. The most perfect knowledge of all known natural laws, and all applicable scientific principles, with the most perfect skill, must conspire, assisted by energy, industry, and economy, to make the most thorough and accomplished farmer.

The education needed by the farmer is one in which practical and scientific knowledge can be the most thoroughly blended and imparted. The institution intended to furnish education to this class, must not overlook the importance of both branches of knowledge, theoretical and practical, in a united form. A just proportion of each is indispensable to the true education of the farmer. A farmer's college must teach the practical as well as the scientific, or it will become a failure.

The question is repeatedly asked, "How can the farmer's practical skill be improved?" or, in other words, "How can he be taught to plow and hoe in a better manner?" Yet, notwithstanding these inquiries, any one can readily see that even in the mere application of labor to the simplest farm operation, there is much to be learned. A Scotchman will dig three rods of ditch to an American's two, and do it better. An English plowman, taught with implements far inferior to our own, and guiding the team himself by a slender rein, will strike a straighter, and lay a handsomer furrow, than any Yankee farmer, even with one to drive the team. If the practical skill of the farmer cannot be improved, he had better abandon the finished and perfect implements of to-day, and return to the sickle and flail of years ago. The skill of the farmer in performing farm labor can be improved, and this improvement is a part of his education. It is one of the offices of an Agricultural College to impart this instruction.

Mix one part of plaster and two parts of ashes, rather than to use either alone. Applied to corn at planting, the mixture gives it an early vigorous start, and on potatoes at hoeing, will increase the quantity and improve the quality.

BET SUGAR IN THE WEST.

BT Chattswarth, near the Chicago Branch of the Illinois Central Railroad, experiments have been in progress to which Western men, interested in the highest development of the agricultural resources of those great prairies, have looked with no little anxiety, and much hopefulness, for results. Some circumstances occurred in experimenting, in the state of the weather, or the want of proper machinery, that prevented the manufacture of a large crop of beets produced on the Chattswarth farm. At length, difficulties were overcome, and all concerned were delighted to find that the beets raised there abound in saccharine juices, and that the results obtained are in every respect encouraging. The editor of the *Prairie Farmer* saw the process, which is, briefly, as follows:

The beets are washed, topped, decayed parts cut away, or the whole discarded, if imperfect. A toothed cylinder, two feet in diameter, driven at a high rate of speed, is used as a grater. The beets are fed up to it by a pair of plungers. The pulp and juice fall below in an iron tank, fine and white as snow. Two hundred pounds of the pulp is put in a centrifugal machine at once, and the juice separated from it by centrifugal force in a few moments. The juice goes thence into clarifying tanks, where it is clarified preparatory to evaporation. In these recent experiments, no bone filters were ready, and hence other methods were resorted to to defecate the juice. The evaporation was done both in a kettle with steam coil, and on sorgho evaporators." The editor says of the first experiment: "When it had reached a consistency supposed to be right for granulating, it was taken off and set in a warm room for the night. With many anxious feelings we approached the vessel holding it the next morning, when, to our great delight, we found the whole mass had crystallised from top to bottom, showing large and splendid crystals of sugar, which, after standing twenty-four hours longer, was allowed to drain. No more than twenty per cent. of it drained out, much of which was sugar. This would have been less had it been allowed to stand longer."

At this time of high prices, when a barrel of good white sugar costs something more than fifty dollars, would it not be well for many of our farmers to sow the sorghum to a moderate extent, and reduce

its juice to syrup for family use. This was done several years ago, when molasses sold for one half of what it is bringing now; and it was then thought that, under improved modes of extracting and boiling the juice, a sweetening might be obtained by a large number of our people at an economical cost. It is now made at the West with success and profit; and the probability is, that they will produce a large surplus the present season.

The only way in which we can learn what can be done in this respect is through numerous trials by individuals in a small way, as well as by associated effort on a large scale, with all the appliances necessary to perfect success. In a small way, the fact can be established, whether the beet and the sorghum contain a sufficient amount of the saccharine quality to make their cultivation an object for the purpose of obtaining sugar. A secondary object would be the large amount of matter left for feed for cattle after the juices are extracted from the beet. Perhaps paper might be manufactured from the "bagasse," or remainder of the sorghum.—*N. E. Farmer.*

WHY NOT TAKE AN AGRICULTURAL PAPER?

AR not the subject one of sufficient importance to interest you? Is not the practical experience of other farmers of value? Have you attained that degree of perfection in farming that you cannot farther improve by your own or the experience of others?

You answer these questions, except the last, in the affirmative; but you say, "I have not time; if I get time to read the current news of the day, I think I do well."

But, is not agriculture of sufficient importance compared with politics and passing events, so as to justify your giving it at least one-thirtieth of your reading time? When my boy comes from the post-office with the newspapers and the *Valley Farmer*, I sit down and read the latter named periodical first, and for the following reasons:—

1. Etiquette requires it. If you have two or more visitors, one only able to call once a month and the balance calling once a week; the former able to give you practical advice in your business, whereas the others only able to amuse or instruct—if these Mr Weeklies are men of sense, they will excuse you for taking a preference to the conversation of Mr. Monthly, they

knowing that when he is absent, you give them your undivided attention.


2. Interest requires it, because you may get a practical idea, that you can in your business improve by even the next day; whereas if a train of cars has run off the track, a steamboat or building destroyed by fire, through the carelessness of others, you could not help it. It may to certain parties be a severe calamity, but the knowledge of it to others is only valuable as one of those lessons of experience by which we may profit.

3. Labor is saved by it. A thrifty farmer has labor daily of a twofold character to perform: Mental—to plan; physical—to accomplish: his success depends as much upon the former as the latter. In a practical, agricultural journal, ideas can be gleaned to save much of the former, and occasionally much of the latter.

Lastly, success requires it. The great secret of success, coupled with energy, is, 1st. Understand your business; and, 2d. Mind your business.—*Correspondent Valley Farmer.*

FARM OPERATIONS.

LABORS IN THE HAY FIELD.

VERY year changes the character of our labors in the hay field. Still the majority of farmers follow very nearly the old customs, and mow before the dew is off, or after it begins to fall, for several reasons. The severe labor of mowing is less fatiguing if done in the cool part of the day; during the heat of the day the hands are needed in curing, or hauling the hay; the labor is more easily performed when the grass is softened by the dew. These reasons are sufficient to settle the question of the time of day when mowing shall be done, with most farmers, and it is immaterial whether the grass be cut mornings or evenings. In fact during rainy or moist weather as much grass may be "got down" as can be taken care of when it clears, and it may lie in the swath some days without damage.

Various kinds of grass mature sufficiently to cut at successive periods on land of the same quality. The crop may be diminished by too early cutting, and its quality hurt by cutting late. Grass ought to be cut when the greater part of it has attained its full size, and is well in blossom. Where many kinds grow together it requires no little experience to judge well, exactly when to put in the scythe. Grass cut ripe, is not only more tough and woody, and in danger of drying so as to be brittle, and waste when handled, but the hay is not so sweet or nutritious. When cut with the scythe, the grass is left in swaths, which hold most of the dew, so that a very little sun dries the ground. Guided by the dryness of the ground, the swaths are generally spread very soon after cutting, when this is

done after 7 or 8 o'clock in the morning. It is much better, in our experience, to wait until the ground is not only dry but warm, before spreading. It is as important to know when to stop "curing" hay, or rather when to stop *sunning* it, as to know when to begin to cut. Hay cures better in the cock than it does in the sun. The juices of the grass if dried slowly become inspissated, that is, thick or *gummy*, without undergoing any perceptible change except a loss of water. If after the drying has commenced the grass becomes wet, a change takes place very soon, and this is seen in its bleaching if exposed, or heating if covered.

This condition of inspissation, or gumminess of the juices, is attained much more easily in grass cut before it is ripe than afterward, and the liability to such hay of heating or damaging by either rain or lying in close heaps is less. While the grass is still fresh, it will bear the hot sun, and wilt rapidly, but after it has parted with most of its water it ought to be dried more slowly. This is effected in cocks which lie up loose, so as to permit a free circulation of air, and if hay-caps be used, the curing process goes on during the night or even during rainy days. It may be that the heaps do not really dry much after the heat of the sun is out of them, nights and rainy days, but the moisture in the greenest locks distributes itself through the rest of the hay and the whole mass becomes evenly cured. Hay caps ought not to cover more than the upper third of the cock—otherwise the ventilation is interfered with. If made of good unbleached cotton, a yard and a quarter square, they will afford sufficient protection.

In bright weather hay ought never to be spread thin or stirred much on the second day, but after getting heated through both by the sun and the action of the warmed ground upon which the cocks are opened, it should be thrown together in loose heaps to finish, and as soon as a lock wrung in the hands exhibits no moisture, and it has a good, sweet hay smell, it may be considered cured enough to put up in cocks as large as can conveniently be made, capped and left thus one or several days to "sweat" before getting into the barn. This we think is the surest way to get sweet green hay. Yet hay may often be cut and made in a single day, and housed before night, which if well salted in the mow will be good and sweet. It is more important to cure clover in cocks than any other kind.

The mowing machine makes great changes in the labor, but, not in the principles of hay making. 1st. The grass is not cut until the dew is off. 2d. It lies spread as thin as it stood, and needs little, if any, stirring—if any, turning with a fork, following the track of the machine backward, is most convenient. After three or four hours' sunning, the horse-rake will gather it into windrows, so that all that is cut before noon may be in cocks by 5 o'clock—before the dew begins to fall. If capped, it will endure a long siege of rainy weather. A few hours' exposure to the sun and air fits it for cocking up to sweat as before stated. This system dispenses with the "hay-tedder" or hay-stirring machine. Hay-loaders, though somewhat before the public, have not been sufficiently tested. Unloading horseforks of sundry patterns all save much hard work, asthmatic torture and sweltering up under the ridge-pole. There is a plan also for lifting the entire load at once—which, however, seems of doubtful utility. These contrivances for dumping in large masses of hay make the old hay-knife convenient in getting it out again. Large mows ought never to be made without ventilating passages running perpendicularly through them once in 10 to 15 feet. A few 2-inch auger holes being made within a circle of twelve inches in diameter in the floor, a grain bag filled with hay is set upon them, and as the mow rises, the hay is trampled hard around the bag, and it is gradually drawn up. The above principles applicable to securing the hay crop in the best condition, with some slight modifications, answer for everything else grown to cure for dry fodder.

A CHAPTER TO BE READ NOW.



BUCKWHEAT has not been so largely cultivated for several years, as it was formerly, and we are inclined to believe that with the exception of Aroostook and Piscataquis counties, (and some portions of Penobscot) its cultivation is going out of practice. In the central portion of the State it is only grown in small quantities as a pasturage for bees. Why it is not more extensively cultivated, we do not know. Very large crops are often produced—it will grow well on land only moderately rich, and its cultivation is attended with little expense. It is rather a difficult crop to cure, but as the straw is of small value, this is not a great disadvantage. Within a few years farmers have grown fodder corn somewhat extensively, which has consumed whatever dressing might be left over from planting; consequently buckwheat has been neglected. But this should not be the case. Sward turned over any time this month and harrowed once, is all the preparation required. Sow from half a bushel to three pecks of seed. Our experience is in favor of the India or rough variety—*Polygonum Tataricum*—as it yields better than the other variety, and ripens in season to escape the early frosts. We believe that farmers cannot do better than devote an acre or so to this crop. Its cultivation will not interfere much with other crops, and if the year should prove unfavorable, the yield will greatly augment the crops of the farm, and the support of a family. It is true, help is somewhat scarce, but it will not do for this reason for farmers to neglect that which gives them bread. And what food is more agreeable or wholesome than buckwheat fritters? Wet or moist land that cannot be appropriated to other crops may be profitably sown to buckwheat.

TURNIPS are a valuable crop. They are grown with little care, and form an important auxiliary in wintering farm stock. Our farmers do not and have not raised them to that extent which they ought. Ruta bagas can be sown from the middle of June to the 25th of July, and the English flat can be put in as late as August. This last can take the place of early potatoes or peas, and can also be planted among corn at the second hoeing. A correspondent of the *Mass. Plowman* states his method for the past ten years to have been to sow turnip seed and grass seed together with corn at the last time of hoeing. By this

plan he raises a crop of turnips, and at the same time seeds his land for the next season. In planting and hoeing, care is taken to leave the ground level. In the spring the corn stubbles are out off, (while the ground is yet frozen,) with a common hoe, and they are said to be less in the way of mowing than rye or wheat stubble. We would suggest rolling the land in the spring. This writer says he gets better crops of grass in this way than he does when seeding down in the spring with spring grain, and it does not "run out" so soon. We wish some of our farmers would try this plan on a small scale, and report the results.

FODDER CORN should be sown at intervals of two weeks, from now until the last of July. A farmer in the eastern part of the State, recommends the common sweet corn as the best variety for this purpose. The uses and value of this crop are well known, and its cultivation is largely increasing.

QUANTITY OF SEEDS PER ACRE.



are frequently asked how much seed per acre is required of different kinds of grain, grasses and vegetables. We give the following for reference:

Grain.—Wheat $1\frac{1}{2}$ to 2 bushels; rye, $1\frac{1}{4}$ to $1\frac{1}{2}$ bushels; oats, $2\frac{1}{2}$ to 3 bushels; barley and oats, 1 bushel oats to 2 of barley; peas, 2 to 3 bushels; buckwheat, $\frac{1}{2}$ to $\frac{3}{4}$ of a bushel; corn in hills, 6 to 8 quarts; in drills, for fodder, 2 to 3 bushels; broadcast, for fodder, 3 to 4 bushels; broom corn, in drills, $\frac{1}{2}$ to $\frac{3}{4}$ of a bushel; beans, (white) 1 to $1\frac{1}{2}$ bushels; sorghum, $\frac{1}{2}$ to $\frac{3}{4}$ of a bushel.

Grasses.—Timothy, 8 to 12 quarts; orchard grass, $1\frac{1}{2}$ to 2 bushels; red top, 12 to 16 quarts; Kentucky blue grass, 2 bushels; white clover, 4 to 6 quarts; red clover, 6 to 8 quarts; millet, $\frac{1}{2}$ to $\frac{3}{4}$ of a bushel; lucerne, 8 to 10 pounds.—For pasture, sow 2 to 3 bushels of a mixture of the different grasses and clovers. Hungarian grass, $\frac{1}{2}$ to $\frac{3}{4}$ of a bushel.

Vegetable and other seeds.—Beets, 4 to 5 lbs; carrots, 2 lbs; ruta-baga, $\frac{3}{4}$ to 1 lb; tobacco, 2 oz; white mustard, 10 to 15 quarts; cotton, 2 to 5 bushels; turnip, 1 to 2 lbs; parsnip, 1 to 2 lbs; potatoes, 1 to 15 bushels, depending upon mode of cutting, or whether cut or not; flax, 1 to 2 bushels; hemp, 1 to $1\frac{1}{2}$, and sometimes 2 bushels; onion, 3 to 4 pounds.

BROOM CORN, ITS CULTURE, &c.

HAVING written a short article for the *Prairie Farmer* under the above title, which appeared in your issue of the 14th inst. giving directions how to plant Broom Corn, I now give you for the benefit of the readers of your valuable paper, my way of attending and harvesting the same.

Attending.

This should commence as soon as the young plants are large enough to admit of working in, which will be very soon after it comes up, if the ground has been well prepared before planting. A good way to go over it the first time, is to get a common two horse harrow made in the form of the letter A, and take on the front tooth, using it the same as a two horse cultivator. This will pulverize the soil well, and leave it in good condition for the plows, which should be double shovel or a two-horse cultivator with a good shield on it to protect the young plants from being covered up. After the first plowing it should be thinned out to six or eight stalks in a hill. If the weeds are not all killed out between the hills, the hoe must be used to do it. I know this is a severe remedy, for western men do not like to use the hoe, but they must remember that it is a critical case, and nothing else will do, as the rows cannot be plowed cross-wise. Harrowing once, and plowing three times will generally be sufficient cultivation, but I should remark that no exact rules can be given for the cultivation of this crop. The only general rule applicable, is to keep the ground mellow and free from grass and weeds, until it is "laid by."

Harvesting.

This should be commenced as soon as the brush has matured, which is when the seed is in the dough.

It should not be bent down until the brush has reached this state of maturity, when it may be "tabled" if you are ready to commence cutting and not without. It will be greatly to the advantage of the broom corn grower, to get an experienced person at this time, to teach him how to table and cut the brush, as the profitableness of the crop depends very much on this part of it being done right. This process can be taught in ten minutes by an experienced person, but cannot be very understandingly described with a pen.

Tabling.

Two rows are bent down together in such a way as to form a good table about two

feet high, letting the brush project beyond the rows so that when cut off the table will not fall down.

Cutting.

First get a proper knife, and keep it sharp; one of the largest sized shoe knives is the best. Grass, the brush of as many stalks of even length as you see lying near each other, and place the knife on the stalks about six or eight inches from the brush, and shove the knife from you, pulling at the same time on the brush. In this way the blades will all slip off. When you get a handful of brush, lay it on the table to dry, and repeat the process until all is cut. A good hand with nimble fingers can cut one-fourth of an acre per day after it is tabled; and a very extra hand, with much experience, will cut half an acre on extra occasions. Boys can be employed to good advantage in cutting broom corn. A smart boy will cut almost as much as a man.

Drying.

It will require three or four days of good weather to thoroughly dry the brush in this way, and when dry it may be taken to the barn or shed, and kept until winter, and the seed taken off at leisure. The seed is as good as oats for food, and will pay the expense of thrashing, if properly cleaned before feeding. The yield of brush, is from six to eight hundred pounds per acre. Much more than this can be raised on an acre, but that amount is considered a good crop in the west.—*Prairie Farmer.*

THE FARMER'S COMPOST BED.

PROPOSE to show the advantage of husbanding every particle of matter to make manure, that too generally goes to waste for want of a knowledge of the profit resulting from such care. The practice of every farmer should be to have a compost bed, or place of deposit for receiving the refuse matter of the farm, such as ditch cleanings, muck and scraping of every kind, weeds of all descriptions, before the seed has matured, and which a careful farmer will always take care to have eradicated from his ground. The rule should be an invariable one on every farm, to have these always hauled to a place of deposit, where they will ferment and rot, and make a valuable accumulation for top-dressing a worn out grass field, or to mix with manure to absorb its juices and increase its bulk, without lessening its quality. This is no fancy; I had a neighbor who practised this plan for years, and had one of the best up-

land farms in the county of Delaware, and owing to the care thus taken of all his manure, wintered and fed for a succession of years, one hundred head, exclusive of his working stock, and horses; and that same farm, since his death, owing to different management, has so fallen off as not to keep fifty head all told. This is precisely comparable to a frugal industrious man who has accumulated an independency; when death closes his career, his savings go into the hands of the spendthrift, and it all goes to the wind.

It must be evident from the case above stated, the great advantage it is to the community at large, for men who have lands to cultivate, to bring them up to as high a condition as possible. If this were the general practice of all the landholders within a circuit of twenty miles of Philadelphia, the advantages and wealth are incalculable, compared with the present state of management.—*Morris' Rural Advertiser.*

DITCHING.

THE world is given to ditching; and it is made rich by it. Look at our canals; look at the military spade; and there are other ways through the earth.

But the ditch that drains off the water of the fields—this swallows all others. Sour is the earth where water stands. A ditch sweetens it: it warms it: and a different life is there. Its wealth, which has so long lain dormant, is now brought into use. This use can be hastened by lime. Apply finely spread on the plowed surface in the fall, harrow in, and in the spring you are ready for anything, either for sowing, cultivating, or plowing again. Plowing in early spring, however, is not always best. When the soil is dry and the sward rotted, it will do: several plowing in succession all the better, for you cannot stir your soil too much when dry. Run ditches through all your wet lands; through lands where water will stand some time after rain, in a hole dug, a post hole for instance: If you want, lay the tile, or cover with stone—leave open. Better so much ground lost than all your land wet and worthless. There is no excuse for an open ditch, as it is easily formed. It can be done by a plow alone. This will materially change the soil: But the ditch should be covered. The best soil is on the top of the ditch. There, no rain will hurt it. There, the moisture will also be held.—*Valley Farmer.*

HURRY IN FARMING

HE hurry in plowing, and plow too wet; and is not this the case in harrowing too? This is a universal evil. How often we hoe, *i. e.*, many people do, when the hoe has to be constantly cleaned. When dew is the cause of this, it is on the other hand a good sign, as it shows the man is up early. But when the soil wets your hoe, you are sinning against it. If there is an excuse here, it is in favor of hoeing potatoes: it gets the hill moist. In no case should dry ground be drawn up against a hill, as a soaking rain would not soak it.

But it is good to make fence in a wet time, when you have stakes to drive. Always remember that.

It is bad policy to hurry in your hay; cut it in the morning, and draw it in the same day, even if pretty ripe. You hurry it in, and it will take its time to sweat and steam in the mow; an operation which should be performed in the cock. Many people have not yet learned this; and they always have poor hay,—musty, to a greater or less degree, even if it retains its green tint. The must is still there; and that is hurtful, especially to some kinds of stock.

We should hurry, however, to get our seed in as soon as possible; our crops harvested as soon as can be; but each in its time, *without forcing it*. Hurry is not always in hard labor, but doing a thing in its proper time.—F., in *Valley Farmer*.

GROWING CORN FOR SOILING.

WILL give my experience, which has been considerable, in growing corn for soiling.

1st. If the soil is not already moderately rich, it should be made so by manuring; be deeply plowed and thoroughly pulverized.

2d. The best kind to sow, beyond all question, is the *choicest* sorts of *Sweet Corn*. You do not get so large a growth of stalk or ear from this kind as from many others; but it is so superior in quality, that this more than compensates for a lessened quantity per acre; besides, cattle will eat the whole of the stalk to the but, it is so much sweeter and tenderer; there is consequently much less waste in the stalks.

3d. It should be sown in drills about three feet apart, so as to leave room to work the cultivator between the rows, till the corn shades the ground sufficiently to keep the weeds down. The stalks should

not be left nearer than six inches to each other in the drills or rows. This thin planting will give about as good a growth per acre as if thicker, and the growth will be better and more nutritious. The next best method to drilling, is to sow about one to one and a half bushels per acre broadcast, and plow in lightly with a three share gang plow. The turn then comes up in drills about one foot apart. It should never be harrowed in after sowing broadcast; for if thus left to grow up, the stalks have a *yellow, sickly, stunted* growth, and rarely produce ears. It is essentially necessary for corn to have a good *circulation* of air between its stalks, to ensure a nutritious growth, and you cannot get this unless it is in rows or drills. This is one great reason why wheat is so much superior when drilled.

4th. The corn should not be cut till the ears are nearly fit for roasting, as both these and the stalks are then in perfection for soiling. If fed previously to this, the cattle are apt to scour, and the corn does them less good—in fact it is often hurtful to them.

5th. To ensure corn for soiling during a long season, begin with planting the earliest sorts, and then continue with later sorts, in limited quantity, every two weeks. In this way you may have corn fit for soiling, in this latitude, from last of July to fore part of October.

One season I kept a considerable herd of cows, almost fat enough for the butcher, and yet all the time they gave from twelve to twenty-seven quarts of milk each per day. I have no doubt the average of their milk per day for about four months was at least fourteen quarts each of uncommonly rich milk. I have always regretted I did not keep an accurate account of the milking that season. The herd was composed of superior milkers, and of course had first rate pasture, in addition to the green corn, but no other food.—*Country Gentleman*.

TOP-DRESSING MEADOWS.

A farmer in this neighborhood says he top-dressed a three-acre meadow, a year ago last fall, by way of experiment. He allowed the cattle to remain on it till the 28th of May, when they were taken out; and in five weeks from that time he cut two tons of good hay per acre. He thinks there is no way of using manure more profitably than as a top-dressing for grass.

BREEDERS' DEPARTMENT.

MANAGEMENT OF RESTIVE HORSES.

SEVERAL years since I owned a very fine young blooded mare, of great nerve and spirit, and endurance almost incredible. She required constant and daily use, or she would become unmanageable with most persons.

I could keep her quiet while being harnessed, but as soon as I left her head and took hold of the lines, two men could not hold her. She would rear, plunge and start off on a run.

I completely cured her of this by putting a *twitch* on the upper lip. A twitch is a loop or cord which passes through a hole in a piece of board; by turning the board the cord grasps tightly anything within the loop. This caused her to stand perfectly quiet until I got into the carriage, when I caused her to be led a short distance by the twitch.

Two applications of the twitch completely cured her. She, however, always required very gentle and firm treatment, and would never bear the whip or harsh treatment.

I drove her several years, and considered her as safe a horse as could be found, with a proper driver. I never struck her with a whip. This method might not answer with all horses. I have frequently used it (always with success when used with kind but firm treatment) on colts that were high spirited and difficult to harness. which colts if properly broken, make the most safe and useful horses.

If the horse is balky, and will not start with kind, but firm treatment, I think it can be cured effectively.

Last fall I traded for a mare of very fine appearance. and quite fast. The person of whom I bought her recommended her very highly, particularly for standing without hitching—said she would stand for hours. I found this was a fact, and that she would not start at all some times. She was put up to the carriage one morning. I was in quite a hurry to get to town. She would not start, and coaxing, scolding, whipping had no effect on her. I called one of the men, and told him to stand by her until I returned, and if she offered to start, to stop her, and to give her nothing to eat or drink until I came home at night.

After standing about six hours she

wanted to start, but was prevented. On my return home, after she had stood about twelve hours, I got into the carriage. She started at the word, was driven about six miles, put in the stable and fed, and has never been any trouble since—never has balked the least.—*Country Gentleman.*

SELECTION OF MALES FOR BREEDING.

THE season has now arrived when a horse has to be chosen to which the mares must be taken to have foals by. The time is near at hand when a bull will have to be selected to have the cows bred by, and after a while it will be necessary to decide where a ram shall be brought to serve the ewes next fall. The importance attached in securing proper males for siring the next generation will at once stamp the character of any farmer who attempts to be the raiser of live stock. Many, very many, look only for an animal which can be used at the least outlay of cost and trouble. Any horse is good enough, and the bull easiest obtained will do, and as for rams the two or three little dwindling wretches which were refused by the drover and butcher last summer cannot be put to a better purpose than allowed to run round. Thus in the finest country under the sun for stock raising, the continual cry is, it don't pay to keep stock; the land is not good enough, for nothing fattens without giving more than the profits in grain, meal, &c.; besides such bad luck attends in the rearing of the young, and the cows give so little milk, the sheep cut next to no wool, and the horse raised rarely pays for food and attendance. Let shame attend such men, for they not only injure themselves and families, but deter others from keeping cattle and sheep, and thus entail a vast loss to the whole community, and moreover occasion the land they occupy to "run out," or become exhausted to such a degree that it will not pay for cultivation.

It is surprising that the wives of these farmers possess far more sense than their husbands, for should they hear of a breed of fowls superior to their own, a setting of eggs is sent for, and the next season every rooster on the premises has to have his head off to make room for the young ones of the better sort, and through attention much money is made by poultry, whereas others have no success, and don't believe there is any profit attached to keeping them.

A great deal has been said and written of late on the subject of in-and-in breeding, but the writer of this has known several cases of great losses occurring through this mode, which, though not taking place in any instance in the first progeny, yet surely showed in future generations, even after fresh blood had been introduced. This was in the cows and pigs, particularly with the latter; the chief mischief was abortion in the cow stock, and in the small number of pigs at a birth with the sows—three, two and one being the whole litter in numerous instances. The fact of large sheep owners doing this with impunity proves naught; but watch these flocks, and in a few years every head of the in-and-in bred ones will be sold off under some pretext or other, the real cause being barrenness and utter incapacity for propagating their species.

CATTLE VERSUS HORSES.

THE great reason you so sedulously put forth for using oxen, is the *rise in the value of them for beef in the fall*, so that after one has got all work out of them, they pay a profit besides; and not, as with horses, you don't keep them through the winter "eatin' their heads off."

I wish it had been so. I, alas, bought at such figures in the spring, that when fall came, instead of beef being "high" enough to allow the stated "profit," it was "low" enough to afford a "loss." I hear you say, "Oh, you didn't buy low enough." I admit—I admit it—not "low" enough to get the "profit." But who can buy "good workers" at beef prices? Everybody seemed buying when I bought, and cattle were "up;" and everybody seemed selling when I sold, and cattle were "down." If you now intend to stigmatize my judgment, I won't say I do know or don't know, but caution you that I took advice from those who think they know.

They were a noble pair—"big every way." I had a man who really knew how to "gee and haw" them, &c., for he had come from the land of stones, where the ox flourishes at stone-pulling and stone-plowing, and, egad, I might as well say at stone-raising, for, indeed, it seems to me the plow and harrow has a magical effect upon the stones in such regions. I've lived there, for a spell only however, and know it. Perhaps there is where the ox flourishes the best; for a relative who lives there told me, and I believe him, that his father himself,

one man, a 'yoke of cattle," and a cart removed by their proper respective operations *during three weeks, the "plowed crop," stones, from off three acres.* As most of the stones were of a size to be thrown into the cart, *the cattle were most of the time busily engaged in standing still, a work, as far as I can judge, best fitted for them!*

Now, Mr. Ox-Advocate, you tell me that cattle, "to do well." i. e., to compete with horses, must be "fed well" and groomed well. On that score I am free from censure, for did they not have stalls, were they not fed well, and groomed until they beat the horses at "shining?" Well, I assure you, Mr. Advocate, that the cattle-man and horse-man, in truth, wagged their tongues upon whose beasts were best cared for, until they nearly came to blows, and on their referring it to me, I was greatly puzzled to discharge such weighty functions. I must confess, however, that the *fall profit* in the oxen rather biased my opinion.

The oxen "did well," that is to be more particular, ate all the meal and hay given to them, and would have eaten more, (greedy oxen,) if they could have got it, looked well, and—and—must I say, it worked—slow!

I declare I hate to recall the scenes during the hot days—not so hot either, only the hot days of spring, the mild monitors of coming spicy weather. A photographer would have had no difficulty in taking an instantaneous view of a yoke of oxen moving along as if each movement was to be the last, while a man rode lazily upon the plow handles, while such lengths of tongues, such flank exertion, as if they were moving the earth to its very centre, instead of turning over a depth of seven inches of good soil, did not denote disregard to heat in that degree I have been told and have read of. For I have read about oxen traversing the hot sands and bearing up under the almost scorching winds of Southern Asia. But they are "used to it." I advise an importation of some of these "fellers," for their flesh, when devoid of vitality, ought to freeze on the hottest days we have, and so be a great boon for those farmers who hav'nt an ice-house. Imagine "thawing out" such meat by the fire, on a hot August day.

All I have to say now is, in this experimental race between "Cattle vs. Horses," I killed one ox, bought another "yoke" to see the race out," and when fall came, sold the three oxen for thirty dollars less than cost. HORSE-MAN in *Country Gentleman*.

DON'T STINT THE COLTS.



VERY promising colt, the product of a superior mare and well bred stallion, often proves a worthless horse. The reason is that after the colt is weaned, he is suffered to shift for himself, and subsists on the cheapest and coarsest kind of

provender. Sometimes he is turned out with young cattle, and has the privilege of boarding with them, on scanty fare in the day time, and lodging with them at night, in unsheltered situations, where, in consequence of inclement weather and damp ground their constitutions are ruined, and the foundation is laid for many of those diseases which after emergency from colic hood, appear and make such sad havoc among our best appearing horses.

It is bad policy to stint the colt of food after weaning, for there is no season of its life when care, good and full feeding of appropriate food, will tell so well as when commenced at this period and continued during that of the first year. The reason is very plain; the mother's milk contains, in a highly concentrated form, all the elements which enter into the composition of the colt's body, and it is the only specimen of a single article of food capable of affording nutriment to young animals and of perfecting the structures of their body. Now suppose that, after weaning the colt, we let him trust to luck for grub, by offering him the freedom of the farm, where inferior grass and dried cornstalks obtain—is it possible that he can there find any thing that will compare with the cascade of his mother's milk in furnishing the constituents of blood? Hence in an unthrifty pasture, or where the same has been cropped by cattle, the colt's chances of procuring a living are rather slim. The reader may contend that many colts thus fed and cared for manage to grow and live, and I think so too; but they have to consume so much of the inferior fodder that it makes them pot-bellied, lank-legged, ravenous, and wormy "sons of mares," and prematurely impairs their digestive organs.

At no time in the life of colts, do English farmers pay so much attention to these animals, or feed them better, than during their first winter; and these men contend if you inform them correctly, how a colt is fed and cared for the first year, they will predict what kind of a horse he will make.

Just so soon as a colt is weaned, he should have a few handfuls of good oats, bruised,

per day, a few pounds of cut straw, and a few pounds of sweet hay cut. All else that he procures in the pasture will fill up the gap in his stomach (which occurs between meals,) and he will not over-distend that organ, nor his intestines, simply because the wants of nature have to a great extent been satisfied, or rather provided for, by feeding the articles just alluded to. Some persons may object to feeding colts, in a generous manner, on account of the expense; but if good fodder makes strong, vigorous and healthy colts, and such colts make valuable horses, then I think that such investment must pay well.

Finally, the principal effect produced on the growing animal by an insufficient nutrition, is to hinder his best development. Therefore, I say, *Don't stint the colts.*

REMARKS ON FEEDING OATS AND HAY.



OATS when given whole, particularly to aged animals, pass in large quantities through the intestinal canal with the fæces, unmasticated, and consequently undigested, and when thus purged, not only give no nutriment to the body, but we believe, do harm.

The large intestines of the horse and his species, unlike most other animals, are extensively large, and the glands are constantly pouring forth their secretions to digest the unmasticated corn, but without effect; this waste of the secretion must be at the expense of the animal's condition, without giving any advantage. Both these evils are removed by bruising and cutting the animal's provender. The most careless observer of horses knows very well, that it is very rare indeed to meet with undigested oats in the fæces of an animal living on bruised food and cut hay, but exactly the reverse of this is seen when unbruised oats and uncut hay are given, especially to aged animals.

If therefore, oats, passing undigested through the digestive tub, do no good, but harm, it is natural to suppose that an animal can do an equal amount of work with a less quantity of provender, when he gets all the nutritive matter from every oat he eats; than he can where he loses all the nutriment from a large portion of what he eats.

According to the experiments of the best chemical physiologists of the present day, we must conclude that the mixture of the food with the saliva is of the utmost importance in effecting good and easy digestion. If it is so in the human subject, much more


must it be so with herbivorous animals, when food contains so much starchy matter—that constituent of vegetables upon which the saliva principally acts, and which is converted with the elements suitable for carrying on respiration, and for producing animal heat.

It would be out of place for me here to explain the whole process of digestion and the various chemical changes, which take place in the different constituents of food as they pass from the mouth backwards! I shall therefore only mention one experiment of Mialke and Keaumur, to show the importance of the food being properly mixed with saliva, and then shall endeavor to prove that the whole of the provender is better masticated, and more thoroughly mixed together, than when given the old way.

The above named gentlemen proved by several experiments. that if food was mixed with water only and placed in the stomach, and the cesophagus tied, that although the stomach secreted abundance of gastric fluid, it did not undergo digestion; but if the same food was mixed with saliva, and the rest of the experiment similarly performed, the food was readily digested.

These and many other experiments of a similar kind, by men of the highest standing in chemistry and physiology, are, I think conclusive evidence of the importance of saliva, in the process of digestion.—*Hunting "on The Management of Pit Horses."*


GOOD MILKERS.

 It is an easy matter to distinguish a good milker. The farthest removed from the bull the better. As the male has no milking properties, and the female is devoted to them, and none so much as the cow; so we are to judge from this principle.


No person of ordinary intelligence would select a cow with thick neck, heavy bones, and a bull-like disposition. On the other hand, the true cow, the good milker, is easily known by its thin neck, sometimes almost amounting to deformity (the case with one of ours), small bones, thin sensitive hides, thin neck; and (most of all) a mild, placid disposition, showing absence of animal heat which consumes, or prevents milk from forming. A quiet, motherly face, denoting intelligence and domesticity, is what is wanted. The reservoir of milk, of course, must be large, or there cannot be stored a large quantity. A large, well-formed bag, therefore, is a necessity. A small udder is

an invariable sign of a poor milker. The form and size of a cow are not always to be depended upon. The disposition is perhaps as much, if not more, than any other one point; some say than all other points. We remember a heavy-headed, coarse-bodied cow, but with the mildest of dispositions, as one of the best butter makers we know. A good eater, always healthy. She made during the month of June, 15 lbs. of the best butter a week; and gave a good flow of milk nearly the year round. Avoid the bull, and seek the farthest opposite qualities for the best milker.

KEEPING TOO MUCH STOCK.

 HERE is a great mistake existing among farmers who think that the keeping of all the stock they possibly can is the most profitable. Stock of all kinds must be kept in a thriving condition, or they decline in value. There is no economy in scantily feeding stock, winter or summer. Pastures should never be so closely fed, that they are not flush and luxuriant; and winter should never be commenced with more stock than can be well kept. It is better to sell a portion of your cattle or sheep, and procure feed for the rest, than to starve them all. Sheep that have been poorly wintered, will not yield as many pounds of wool as those well kept, and the wool will be inferior in quality. Cows coming through poor in the spring will not give the quantity of milk that those in good condition will. Every observing farmer knows this to be the case, and such have an eye to the profit, to themselves, and also to the welfare of their animals. We do not mean by this that it is a good policy to let feed go to waste, for there may be as much lost by keeping too little stock as by keeping too much. It should be the rule of every farmer to keep enough stock to consume the feed his farm will produce; but never more than can be kept in good condition.

BE KIND TO MILCH COWS.


 TEMPTING to overcome cows that are unquiet while being milked, by beating them, is a very poor plan. It will do them more harm than good, for the cows will become angry and afraid, and will at once form a dislike to their chastiser, and ever be in an agitated state while being milked, expecting loud words and hard blows before the operation is completed.

Milch cows cannot be whipped into a state of submission and docility; kind treatment only will make them gentle. If cows' teats are sore, some healing remedy should be applied, and all possible care should be exerted while milking not to hurt them. Cows kindly treated will become attached to their milker, and will gladly await his approach, and submit with pleasure to the operation of being milked. Every farmer knows this to be the case; but the trouble is, many cannot, or do not, control their passions enough to submit quietly to a thump or two from a cow's foot. It is irritating, we know, to be kicked over, yet, economy and principle should make us check the rising passion, and use some mild means to prevent the offense being repeated.


A cow does not like a change of milkers; she soon becomes attached to one person who performs the operation regularly, and if a change takes place, she will not give down her milk freely nor willingly, hence a loss—therefore, have one milker to certain cows, and see that he can control himself, govern his passions, and treat the cows, kindly, under almost any provocation.

Milking should be performed at regular hours, and accomplished as quickly as possible; those milking should think of nothing else during the operation. Many dollars may be lost in a dairy during one season, by the drying up of cows, if the milkers are allowed to laugh and talk while milking.

WOUNDS IN HORSES.

 CORRESPONDENT of the *Michigan Farmer* recommends the following remedy for the healing of wounds upon horses: "Saltpetre should be moderately strong to the taste, and bluestone added until the solution is slightly tinged. This, and nothing else, is to be used as a wash, two or three times a day. It purifies the wound, destroys the proud flesh, produces granulations immediately, and heals in a surprisingly short time. I have had a horse badly kicked and otherwise hurt, in midwinter and midsummer, and their cure was equally rapid, and afterwards no scar was visible. The wound requires no covering (flies will not approach it,) and dressing it with a mop of rags tied to a stick is very little trouble. Wounds do not need to be sewed up under this treatment; at least I never saw any advantage from it, as the stitches have uniformly torn out.

RAISING CALVES.

 N this day of high-priced cattle there are still those who believe that it will not pay to raise calves. If it ever did pay, it certainly will now, when poor cattle from the West are advancing in price every year, with every prospect of a continuous increase for years to come. I, for one, have not the least doubt as to the profit of in part raising my own cattle, but in order to make it pay it should be well done.

For raising I prefer spring calves, which after they are one week old, should be taken from the cow, and kept not only entirely out of her sight, but also out of hearing, for nothing will so interfere with the growth as the continual worrying for the cow; if kept entirely out of sight and hearing, the calf will soon forget his mother, and thrive. For the first three or four days after taking from the cow, the calf should be fed three times a day with milk, either as it is drawn from the cow or made warm by artificial heat. Some allow the calf to suck the finger for a week or two, but this is entirely unnecessary, for if the calf is fastened up in a close stable, where he cannot see nor hear any of his kind, he will soon drink without any coaxing at all.

As soon as they have learned to drink properly, I turn them into an orchard or small lot and feed them with skim milk in a trough, exactly as I would pigs. They will soon learn to eat grass, and will only drink the milk instead of water to quench thirst. In this way I allow them to run until fall, living upon grass and what skim milk can be spared them. In the winter they have a good, warm stable, with an open yard to run in during the warm part of the day. As food they have good clover hay, with an occasional lick of meal or feed of turnips or ruta-bagas. Nothing makes a better winter food for cattle than sorghum leaves, well-cured before being placed in the barn; calves or sheep will leave the first quality of hay in order to eat them. I consider oats to be far preferable to ground corn or barley, for I think the latter are better calculated to produce fat than muscle.

Many farmers act under a mistaken notion of economy in the selection of a bull, some on the score of doubtful economy preferring to obtain the services of a poor one gratis to paying fifty cents or one dollar for the services of one of improved stock. This kind of economy is after the

style of placing the finger upon the spile, but leaving the bung hole open. There is no difficulty in settling a four-year old bullock of improved stock for ten or fifteen dollars more than one of common breed; this is a fact which cannot and will not be denied by even those who practice this kind of economy. After seven years' experience in the matter I would estimate the actual profit on raising a steer of improved stock until four years old at from twenty to twenty-five dollars. The amount of profit will vary with the amount of improved blood in the animal (but in fact considerably less) to keep this kind of an animal than one of common breed, the importance of raising those of improved stock cannot be over-estimated.

In my mind there is no doubt of the fact that if well done it will pay to raise the young of any kind of stock and in these times especially that of the cow; but it will not pay to let them "come up" of their own accord, or as Topsy has it, "growed," but they must be taken care of, or it will not pay.

What I wish to impress upon the minds of the practical readers of the *Telegraph* is the importance of breeding from improved animals in preference to those of the common or rather of no particular breed; if for raising, the calves will make as large an animal at three years old as animals of common stock will at four; if for veal, calves of improved stock will weigh as much at one week old as common ones will at four weeks old, so that let your object be whichever it may, it will pay, and that well, too.

The same reasoning will hold good for the raising of all kinds of stock common to the farm, and more particularly with regard to horses.—Farmers too often, for the sake of saving (?) five or ten dollars, will take their mares to horses not of the first class, forgetting that it costs as much to raise a poor horse as a good one, and that the latter will always sell for more, by four or five times the difference than the former.

Many of those who raise calves have a fixed age for castrating the males; this is a great mistake, and will often ruin a calf which otherwise would have made a fine shaped steer. There can be no particular age fixed as a universal rule; the rule which I go by is the shape of the animal, governed by a comparison between the fore and hind quarters—if the former are heavy, that is, too heavy to be in just and proper

proportion to the hind ones, the calf cannot be castrated too soon, but if on the other hand the fore quarters are light, and the calf is narrow breasted, much may be gained by delaying the operation. I usually vary the time from one week to six months old.

Farmers differ very materially as to the best food for young calves. During the summer all they need is a good *natural* growth of grass, but in winter they seem to need the best which can be provided, and should have a shelter and yard for themselves. At least such is my experience. *Germantown Telegraph.*

BRUISED OATS FOR HORSES.



HORSE fed upon whole oats and uncut hay, expends a large proportion of his motive power in the process of mastication. After a hard day's work he has before him the task of reducing to pulp 15 or 20 pounds weight of hard food, and the operation is carried on during the hours which ought to be devoted to repose. Not unfrequently is the animal so tired that he is unable to properly chew his food; he, therefore, bolts the oats, a large proportion of which passes unchanged through his body. Those who desire to render fully effective the motive power of the horse, must pay attention to the mechanical state as well as to the quality and quantity of his food. The force expended by the horse in comminuting his food—when it is composed of hay, straw and oats—may be set down as at least equal to the power he expends in one hour and a half of work, such, for example, as plowing. The preparation of his food by means of steam or water power, or even by animal motive power, would economize, by at least one-half, the labor expended in its mastication; this would be equivalent to half a day's work in every week—a clear gain to the animal's owner.—It has been objected to the use of bruised oats, that they produce a laxative effect upon the animals, but this disadvantage may be easily obviated by the addition of cut straw to his food.

CRACKS IN COW'S TEATS,

Are usually cured, by rubbing molasses on the teats for a few days after milking.

Cows coming in should be kept in wide stalls or loose boxes, well-littered, fed some roots if possible, and closely watched and perhaps assisted at calving.

ENGINEERING DEPARTMENT.

INCREASED USE OF FARM MACHINERY.

MACHINES are being presented to us every day which show the important part that machinery is now taking in performing the labor upon our farms. And not only is it an important, but it is an extensive work they are doing. Before the war, when there was an abundance of workmen to be obtained at ordinary prices, farm machinery was looked upon with decided favor, from the fact that the hardest part of the labor could be performed by machines and animal power, while manual labor could be profitably turned into other channels of industry. Now, with a gigantic rebellion upon us, carrying away to the field of strife those who have heretofore worked in the fields of peaceful labor, we feel the importance of farm machinery to be greater than ever, and are brought to place our greatest reliance upon it. What could be done in planting and hoeing on a large scale without the aid of the seed-sowers and planters, and horse-hoes? How could our hay crop be secured were it not for mowers, horse-rakes and mammoth pitch-forks, elevating several hundred pounds weight of hay at once by horse-power—or the immense grain crops of the West if the reapers, headers and binders were not brought into requisition? Machines are, in fact, at the present time, absolutely indispensable, for by their agency farmers are enabled to perform the work usually accomplished by manual labor, not only in a better manner, but at a more favorable season. Without their aid, in the present scarcity of laborers, it would be almost impossible to plant and cultivate the usual crops, and quite so to secure them in good order at the time of harvesting. Now, with machines taking the place of human hands, and performing the labor with an intelligence scarcely inferior—we had almost said superior—to that performed by men, we may, by the blessing of Providence, reasonably expect a bountiful harvest. The breadth of land devoted to farm crops throughout the State, we believe to be as extensive as in previous years, and the prospects are encouraging. Grass is in advance of former years, the late wet weather being decidedly in its favor.

The war has not only caused an unusual demand for all approved farm machines,

but has given an increased impetus to the inventive genius of our people, and many new machines for performing farm labor have recently been patented. Within a few weeks the *Scientific American* has contained illustrations and descriptions of a stone-lifting machine; a machine for loading hay; one for spreading manure from a waggon or cart; one for tilling the soil—a sort of rotary spader; and one for crushing and harrowing. Not all these may prove successful, but it shows the demand for such machines to be great, and leads to the hope that something entirely practicable will, at no distant time, be found to perform many branches of farm labor now done by hand. The more complete substitution of machine over hand labor in working our farms, the invention and use of which will grow out of the present scarcity of farm labor caused by the war, will be among the blessings the war will bring after it, when peace shall once more be restored.

It is too late in the season to speak of machines for planting and sowing seed. We have heretofore alluded to the potato planter, invented by J. L. True, of Garland, which will hereafter be generally used by our farmers as its merits become better known. Chandler's horse-hoe has stood the test of experimental trial for two seasons, and is regarded as a most useful implement. It is not too late to procure one, for it hoes potatoes, (and corn the second time), performing as well in this operation as in that of covering. We have before us a letter from a correspondent in Knox, in which he says: "I planted last year three acres of potatoes with one of Chandler's horse-hoes, from which I raised one thousand bushels. One half day with myself and horse for covering, and one day in hoeing, was all the work I spent on them, and it was done as well as it could be done by hand."

Mowing-machines, horse-rakes, &c., will be more largely used the present season than ever before. All farmers who have a considerable amount of hay to cut should by all means procure a mower, if they have not already done so. Neighboring farmers or districts can club together, purchase a machine, and perform their work in turns. It is a plan having many disadvantages, but in these times is the best course that in certain cases can be adopted.

Farmers, use all the labor-saving machines you can employ. By this means you can till your ground and raise your crops with as much ease as heretofore, and feel yourself above a dependence upon manual labor. We may be conferring a favor upon manufacturers to encourage the use of machines, but at the same time we are conferring a benefit upon farmers by calling attention to the merits of useful implements. The one aids the other.—*Maine Farmer.*

FIRE-PROOF WASH FOR SHINGLES.

THE following simple application will no doubt prove of great value. We quote from the *Albany Knickerbocker*: "A wash composed of lime, salt, and fine sand, or wood ashes, put on in the ordinary way of whitewashing, renders the roof fiftyfold more safe against taking fire from falling cinders or otherwise, in cases of fire in the vicinity. It pays the expenses a hundredfold in its preserving influence against the effect of the weather. The older and more weather-beaten the shingles, the more benefit derived. Such shingles generally become more or less warped, rough, and cracked, the application of the wash, by wetting the upper surface, restores them at once to their original or first form, thereby closing the space between the shingles; and the lime and sand, by filling up all the cracks and pores in the shingle itself, prevent it from warping for years, if not for ever.

OILING MACHINERY.

ANY agricultural implements may be worked with a much less amount of force by lubricating the journals and other parts where two metals work against each other, with a proper kind of oil.

The object of lubrication is to overcome friction by filling the space between any two surfaces, supposed to be in contact, with oil or other material, so as to prevent the metals from abrading each other.

When common oil is used, this object is attained but in a degree; and in agricultural implements, which are occasionally out of use, the effect of time is to render the oil gummy and adhesive.

All this may be avoided by using cold-pressed sperm oil, such as does not stiffen in cold weather, and is free from albumen and other impurities.

In warm weather lard oil may be used with good effect.

EXPERIENCE WITH THE GANG PLOWS.

ON speaking of the great demand for labor-saving machinery upon the farm, and the success our inventors are meeting with in supplying the demand, Mr. H. C. Smith gives us the following regarding a gang plow he is using upon his farm in LaSalle county:

"I have broken about fifty acres at an average depth of six inches with a gang plow the present season, and I am decidedly of the opinion that the same team can do from one-fourth to one-third more work with my gang plow than with single plows, and do it equally well. This may surprise you, and I know I doubted it until I made the trial. The gang plows hang upon wheels, and have the same advantage over the common plow that the wagon has over the sled on the ground."

THE SPADER AMONG CORN STALKS.

SEE that a correspondent asks if the "Rotary Spade" will work on stalk fields. I can answer him—yes. I tried one in a field where the corn had been drilled in part of the field, and planted in hills the balance of it.

My stock cattle were turned in on the stalks in December and turned out in March. The ground in the meantime was thoroughly "tramped up" the stalks lying in every conceivable shape. Much as two hundred head of cattle would leave a stalk field after being on it some time, during which several hard rain storms had occurred. I put the Spader to work, and, contrary to the expectations of my neighbors, who had gathered in to see—as they expressed it—"the thing work," it performed its work splendidly, never choking up once, but always going to the depth of 8 inches. In that character of ground I made about 7 acres per day, and did not hurry the team just to see how I could spade with it. I am confident on clean ground that 10 or 12 acres per day will be an easy task for it. I wish you had taken my farm on your route to Mr. Sullivant's, and witnessed its operations here.—*Prairie Farmer.*

HOW TO SAVE LABOR ON THE FARM.

IF we were asked what the farmer can do to protect himself against the present evil of scarce and high-priced laborers, we should answer, *improve the tillage*, and especially in the preparation of the ground for crops, make the team and the machinery take the place, as far as

possible, of hand-work. It is a fact but little appreciated, we fear, among farmers that every dollar judiciously expended in the preparation of the ground for the crop will save two, or perhaps five, in the subsequent cultivation.

Take, for example, a field of corn. The ground, after being well plowed, must be worked with the harrow, cultivator or scari-fier, until the entire surface is reduced to a mellow tilth—completely broken up and pulverized. In contrast with the usual practice this thorough work has two advantages—it does half the labor of subsequent cultivation, and will generally increase the crop from twenty-five to fifty per cent.

The labor of planting, of working, and caring for the crop, on a field so prepared, is immensely less than when the planting is done in imperfectly prepared ground. Twice the space can be planted in a day, and in the subsequent culture much more than twice the land can be gone over with a day's labor. The crop gets a good start in spring, before the weeds and grass monopolize the ground, and this advantage holds good throughout the season.

At the present time, when labor is with difficulty obtained, when the prices for such as can be had are extraordinarily high, and when farm products are in good demand, there is every motive for instituting the most complete system of tillage, and preparing every acre of ground intended for crops in the best possible manner. With the improved implements and machines now in use for manipulating the ground, it is possible to do well whatever we have to do in this respect; and we cannot too strongly urge upon our readers the importance now of preparing their fields, especially for hoed crops, with more than usual care and attention.—*N. Y. World.*

WHITEWASH.

WHITE fences and outbuildings indicate the thrifty farmer and a tidy household. Put half a bushel of unslacked lime in a clean, tight barrel, pour over it boiling water until it is covered five inches, stir it briskly until the lime is thoroughly slaked, then then add more water until it is thin as desired, next add two pounds of sulphate of zinc and one of common salt; then apply with a common whitewash brush, giving a good coat in April and October, or at least once a year.

MOWING MACHINES.

THE Massachusetts *Ploughman* says: Let every neighborhood start early and get at least one mowing machine. They can perhaps save their entire cost in a single season. Let every *large* farmer get a horse pitch-fork. That, also, will pay for itself in a single year.

Make up your mind to work harder and make longer days this season than usually, and compensate in part by a more generous "feed" for yourself and your beasts. So arrange your work that a rainy day shall not throw you out of employment. First and last and always, keep up a continual "thinking" and studying how to make your labor count to the greatest advantage in the production of crops. Crops are what we want—this year more than ever before—therefore let each one of our farmer readers try to get the largest possible crops for the amount of labor bestowed.


That is good advice especially these times of scarcity of farm help.

TO MAKE A FIELD ROLLER.

CONSTRUCTED a roller in the following way: Four feet and four inches in diameter: drew a circle of four feet on a smooth floor: drew a line through the centre one way and crossed it by another directly perpendicular to it; laid a piece of half-inch board a foot wide on the circle, one quarter of it, and cut out of it a pattern to make the roller, which was cut from two-inch plank, made double at each end, and firmly pinned together; arms were framed to those heads for the gudgeons of the centre. I covered it with spruce-flags three inches wide, two inches thick, and five and one-half feet long, spiked to the heads; it was then hooped with stout old tierce hoops, made to its size. The gudgeons were iron pins passing through the centre of the arms with a head outside, and fastened in with keys through the inside. The side pieces were three by four inch joists, about five feet long. Immediately in front of the roller, a deep piece was framed into these sides, and on the under side, four inches in front of that was pinned another cross piece, and on the top of them, another cross piece a foot or more from the first mentioned, this forming a place into which any old sled spear and roll could be inserted and taken out with a moment's labor, making the roller occupy much less room when stowed away. A roller made of hard

wood would be harder and better than if made of soft wood.—*Cor. N. H. Journal of Agriculturist.*


POULTRY AND POULTRY HOUSE.

Y plan for a poultry house is a plan which will be the most fitted for the easy management of fowls, as well as being the least expensive. For a hen house, it may be built on one side of the barn, or if you have no building suitable, get four posts, hew two sides; let them be, for the high side, say 9 feet; for the low side, say 6 or 7 feet, which will be enough pitch of roof, provided the house is not more than nine feet wide. Twelve feet by nine will be large enough for 20 hens. Plant your posts firmly in the earth, so as to keep your house firm and steady; get second quality pine or hemlock boards; nail them on lengthwise. If you do not choose to get plates, so as to have the boards run up and down, a shingle roof will be the best, though a good board or slab roof will do well enough, the slabs to cover the cracks between the boards. The house must have a window, with lath nailed across, to let in air and sunshine. The roosts or perches should be placed in the highest side, so as

to leave space enough for the convenient placing of the nests, which ought to be in the warmest part. Fit a tight door on with good hinges and a good lock, and you will have as nice a hen-house as you could wish for. The cost will not be more than eight dollars, with lumber at two cents per foot. A good feed or water trough is made out of a chestnut log, something of the shape of a hog-trough. The best breed of fowls in my estimation is the Poland or top-knot; they are excellent layers, and are of profit until five or six years old.—There are no better hens than the Poland to raise with. As a good, hardy breed, the English pheasants have no equal; they are good layers and are excellent for the table. Description: They are of middle size, with blue legs and double combs; the males are in color red, intermixed with black. A good feed for fowl is a mixture of corn, wheat screenings, oats, or any grain you can get, mixed together. Fresh meat is very good, but I would not feed on it altogether. To have hens lay through the winter they must not be affected by sudden changes of the weather. Hens that lay steadily through the summer do not lay in winter. Pure water is indispensable in poultry breeding.

HORTICULTURAL DEPARTMENT.

THE GREENHOUSE.

URING the summer months it requires some skill in keeping the greenhouse still looking gay. In the first place the glass has to be darkened, or no kind of plants will do. This may either be done by calico blinds made to work on rollers or by whitewashing the glass, just sufficient to break the burning rays of the sun. Common wash with a little salt added, is sufficient for florist's purposes, as by fall it will have worn off again, ready for the dark days of winter.

The next thing to be seen to, is to keep the house as moist as possible, by syringing morning and evening, and frequently wetting the floors. With such management, Fuchsias will grow and flower splendidly, and of themselves are quite attractive, and when mixed up with Begonias of the several kinds, and perhaps some few others, will keep the house gay until time to occupy it

again with the general collection of plants in the fall.

All kinds of bedding plants may now be planted with safety, and any greenhouse plants it is required to have of a larger size, or that have got into a bad state of health, should be returned out into the open border to gain strength. But the real winter flowers, as Camellias, Azalias, Abutilons, and all hard wood plants, should not be turned out of pots except as above. All but Camellias and Azalias should be pruned in pretty well, and re-potted into a size or two larger pots.

The place for plants of this description in summer, is the north side of a fence or building, but not under trees. Plunge the pots to the rim to save watering, as well as to keep the roots from being so subject to the hot, dry and changeable atmosphere.

For next winter's use sow seeds of Chinese Primula, in a month or two Cineraris and Calceolaria.—*Prairie Farmer.*

GARDEN GOSSIP FOR THE SEASON.



Do not neglect the garden, No, not even with hired help at \$26 per month and as much work in the fields as can be attended to Why? Because nothing upon the farm pays a better interest on the labor bestowed, than a good vegetable garden.

It contributes largely to the comforts and enjoyment of living, and can be made a source of pleasure to the women and children. The women and children too—those who are large enough to pull a weed or carry a watering pot—can assist in the work, which will not only aid the male help of the farm, but add to their own health and cheerfulness, giving them rosy cheeks, a good appetite, and the satisfaction of having done something to add to the resources of the farm.

"Eternal vigilance" is not only the price of liberty, but of a good garden. Weeds grow everywhere, and if not kept down by the active use of the hoe, will soon choke out and destroy young garden plants. Keep your eyes open, that you may keep the weeds out of their sight.

The destruction of insects is an important operation in all gardens at this season. Bugs upon vines, bugs upon bushes, and bugs upon plants of every variety. The thumb and finger is about as good an instrument for their destruction as we have used. The operation is not an agreeable one, but it is effectual. Dr. Harris suggested the burning of a bright light just after nightfall—old rags soaked in melted brimstone and fastened to the end of a long pole—for the purpose of destroying such moths and insects as fly at night. He also placed a torch close to the ground near vines and plants for the purpose of destroying those insects of the *coleopterous* class, which have a sort of "coat of mail" covering their wings, keeping off whatever is sprinkled upon them to destroy them. It seems to us the plan would be successful.

The extract of tobacco—such as is used for killing ticks on sheep—has been found a very effectual remedy in destroying the currant and gooseberry worm, and also the insects infesting rose leaves. We intended making examinations with the microscope upon insects infesting the rose, and shall give our readers the result.

Kitchen, sink and other waste water should be carefully saved and applied to currant bushes, tomatoes, and other garden

crops. Besides furnishing the necessary amount of moisture, there is a direct manurial agency to sink-slops, soap suds, &c., and they should not be allowed to be wasted. Manure should be applied for the purpose of hastening and forwarding such crops as require to be brought to early maturity. It acts more directly if applied in a liquid form.

Frequent stirring of the soil also promotes growth. "The gardener," says Mr Harris, "can better dispense with manure, than with the hoe. By the frequent use of the *hoe cultivator* and *digging-fork*, with a deep, mellow, naturally drained soil, we can almost defy the severest drought." This is strong language, but it is language that experience for many years has found to be true. Gardens and fields very often produce better in dry seasons, if the ground is hoed frequently, than they do in wet ones.

THE CURRANT.



THE culture of the currant, or, rather the planting out of currant bushes in the garden, and allowing them to stand there has been a custom all over the country from its early history. When this labor of *setting out* was once performed, if we

take common practice as evidence, the whole work was done, and nothing remained but to gather the fruit in its season, or such portions of it as were left unconsumed by birds, and the matter went on until the next season of fruit gathering. Planted in fresh soils, their growth was liberal enough for a few years, and the fruit was of satisfactory size. As the bushes showed an ability to take a sort of care of themselves, no pruning system was adopted, except such as was given by the browsing of animals, that in winter had the liberty of trampling the garden grounds, "because they could not do much hurt there." Indeed, even this miserable system of pruning was, thanks to the hardiness of the plants, found to be somewhat beneficial in its way, for it kept the growth restricted, thus enabling it to produce more fruit.

The row of currant bushes was usually set "by the fence" around the garden, and the roots were so closely placed that the plants formed a perfect mass of shrubbery. In winter, huge snow-drifts, in snowy regions, were found over this mass. These drifts gave a very good protection to both root and branch; but when the spring came,

and they melted away, they developed a very tangled mass. Many of the shoots, from the weight that had been lying over them, were bowed to the earth, never to rise again by their own strength. Other shoots were half recumbent, and so they might be seen in all parts, in all shapes and conditions. Those which suffered most, in many instances *died out*, thus introducing a system, though not a very judicious one, of pruning. As a matter sure to follow where such a course was tolerated, the stalks grew more and more feeble, the leaves prematurely fell from them, while the fruit from exhaustion of the stalk, diminished in size and flavor, and the old bushes were pronounced "used up." They now stood a very good chance of being abandoned to any fate that might follow. Sometimes, it was probably the case that new plantations were formed from the old; and then the new, in its turn, was left to work out for itself a similar destiny of ruin. The roots were left wholly uncared for. If the grass matted around them, it was thought of little consequence. It would have been thought a waste of manure to apply it to a currant bush, and a very great waste of time to have raked leaves and placed around them.

As fond as the masses are of currants, and as useful and necessary as they can be made in household economy, and as easily as they are grown and perfected, we are reluctant to believe that a course similar to the one we have described is tolerated by any one in the present age of fruit culture. Indeed, we would not suppose the thing possible, had we not, in our rambles a few days since, seen just such a mass of tangled material as the one we have above alluded to. We fear, then, that they may still be found too common every where. But why shall we speak of it, or try to point out a better way through the Horticulturist? People who raise such currant bushes do not take the Horticulturist. We know that fact as well without asking, as we should if they said so under oath. Not only the currant bushes, but every thing about the garden, testify that they do not take that paper, or any other one devoted to rural improvement. They *may* take a story paper or a political one, because the children like to read stories, &c. It is there that we find the difficulty of reaching such people, when we wish to tell them how this rough, tangled mass of ill-looking brush can be renovated and made very beautiful, and produce fruit so improved in size and flavor,

that when they see it laid side by side with the old product, they would never believe that both came from the same garden, if they did not know the fact. Yet we hope something will throw what we have to say before them, and they will try "just one bush," if no more, to see if we tell the truth.

The reader who has experience in horticulture will observe that we are not speaking now of setting out new plantations of the currant, or of their after management. The whole topic lies in the renovation of the old one; a plantation that perhaps somebody's grandfather or great-grandfather put out, away back towards "the days of the Revolution". A precious relic of by-gone days, and one worthy to be preserved and made valuable.

The course of management is very simple, and can be soon told. The first requisites are a sharp knife, and an industrious hand to use it. With these, cut out all old and straggling shoots, and reduce the mass so that at most not more than four or five are left in what constituted what was called a bush at the time of planting. Let the shoots that are allowed to grow be young shoots, and straight, erect ones. Then, if any grass is matted around them, dig it up and destroy it. If weeds have sprung up there, annihilate them entirely. Spade or fork up the ground as best it can be done; and if manure is applied, it will pay good interest. But if manure is too valuable or too scarce, a coat of chip dung will do well, or what is better, gather up leaves from forest trees, and place them liberally around the roots. Many can do this, and accomplish the double object of getting them out of the way and into a place where they become available. The leaves are a good mulch, such as the currant loves, keeping the earth clean, light, and moist. They in due time become a valuable natural manure to the plant. The first season an improvement in the fruit, both in its size and flavor, will be evident; but the matter must not stop so. In each successive spring the thinning-out process must be gone through with, and the mulching with leaves, the oftener the greater success. We have seen this course pursued with ample and astonishing success; and yet it is so cheap and so simple, that any one can raise improved fruit on old bushes, or bushes springing from old roots, by adopting it.

[Mr. Bacon has very truthfully described what is still too common a sight all through our farming districts. The neglect that

currant bushes and other inmates of the farmer's garden meet with is not owing altogether to want of time to care for them, but to a kind of self-admitted conviction that these things can take care of themselves. They have no conception of the difference between currant bushes wellcared for and those not cared for at all. We hope Mr. Bacon's article may meet the eyes of some of them, and produce its legitimate fruits.—Ed.]—*Horticulturist*.

WOMAN AS A GARDENER.

A correspondent of the London Cottage Gardener, describing the residence of Mr. Justice Haliburton, the "Sam Slick" of literary notoriety, says:—I paid a visit to these gardens about a year since, on the occasion of a fancy fair given for some charitable purpose; and never do I remember to have seen bedding done so well, or so choice a collection of plants brought together in a

place of so limited extent. I was given to understand by a florist of some celebrity who was present, that the arrangement of the beds and the selection of the plants, were in the hands of the lady occupier herself. Taste for the harmonising of colors I consider natural in all women of refined education, only unfortunately many of them display it in decorating themselves more than ornamenting their gardens; but if ladies were to follow gardening more usually than they are wont to do, how much oftener should we see the cheek resemble the rose instead of the lily; and how soon also should we perceive the lighter tints made use of in decorating the inside of the bonnets. They would soon be aware that high coloring is not suited to their complexion so well as the more subdued shades. Moreover, God has given us health that we may enjoy the blessings He sends; and depend upon it, that where a lady gardener resides there the physician's carriage seldom stops.

DOMESTIC ECONOMY.

BEDDING.

MATTRESSES, like the cushions of furniture, must have the dust beaten out with the hand, or they, as well as feather beds, may be whipped with long tapering rods. If the ticks are soiled, they can only be cleansed by emptying and washing. If you have a spare room with a perfectly clean floor, you may prepare new feathers for use, or renovate old ones yourself. In a tub or barrel pour a solution of weak lime water over the feathers; let them stand three or four days, stirring them well every day, and changing the water; lastly, rinse them twice through warm water; squeeze them dry or drain them in baskets until they cease to drip; spread them on the floor until perfectly dry; collect into bags and beat with rods until light and lively. If you wish to think, as you do when a professional renovator does the job for you, that your feathers have really increased in bulk, *whip them all to pieces*. By the way, a professional renovator of beds is a person, we think, any housekeeper would deny herself "a love of a bonnet" to have, if her duck of a husband will not otherwise provide funds to have his feathers cleansed.

Mattresses

may likewise be renovated at home, and are a more particular, but less disagreeable job

to execute. The tick, having been washed, should be tacked straight and tight into a frame; on the upper side leave an opening nearly the whole length of the tick; through this aperture place the stuffing of the mattress in smoothly and of equal thickness; next place on it, at equal intervals, little round or square pieces of cloth or table oil cloth; then with a long, sharp, stout needle made for the purpose, stitch through the cloth and mattress several times, and tie on top securely. Small strong cord is used for the sewing.

Husks

are prepared for mattresses by drawing through a hackle and cutting off the stiff portion that joins to the cob. They may be shred up with large scissors.

The moss used by upholsterers may be procured from any of the cities, *ready cleaned*, your bill will say, yet hackling, whipping and shaking will all have to be gone through with to prepare it for use.

The long, coarse hairy wool usually worked up in carpets, makes fine mattresses. After being washed and picked, the wool manufacturer will make it into large fleecy bats, like those you procure from the stores of cotton, and for similar purposes.

For those who cannot afford spring or hair mattresses, the best plan is to furnish

their beds with each, a good husk mattress for the under part, and a composition one for the top.


Composition Mattress, which is made by placing in the tick, first, a thick layer of wool or cotton batting; then, if moss is scarce, put an equal layer of husks; then a full layer of clean well picked moss, or better still, of curled hair. Place your wool side up, and you have a warm easy bed for winter. Turn it over in spring, and the moss side affords a cool and elastic couch. A thin comfort of feathers, or a pretty thick one of wool or cotton bats, spread over a husk mattress, makes a bed on which the weary may rest without repining.

Over children's beds and those used in sickness, there should be spread two-thirds of the way down the bed, a soft table oil-cloth, to prevent accidental wetting or staining the bed, in bathing, bleeding, administering food, &c. In summer the coolness of the cloth will be agreeable; in winter an old blanket should be placed between the oilcloth and the sheet.

Hair Mattresses

are made by the same directions as husks or moss, after the hair is prepared. The hair is usually from the tails of beeves. After being thoroughly washed and dried, it is twisted on a wheel into cords; then being tied securely, it is boiled; and when dried again, cut into short pieces and whipped until light and lively. Hair thus prepared is used for the stuffing of *curled hair mattresses*: but many hair mattresses are made of the hair of swine and cattle, prepared as the other, except the curling. The labor of making these mattresses is almost too much for these degenerate days of labor-saving machines and self-indulgence.

FRENCH MUFFINS.

 QUART of warm water in which has been dissolved a quarter of a pound of hard yeast, and mixed with sufficient flour to make rather a stiff batter, set it in a warm place four hours, then stir it down and divide it into pieces of a quarter of a pound each, which mould with the hands and put into wooden trays containing a round bed of flour for each; let them stand two hours in a warm place, and cook them upon an iron griddle, turning them over when nicely risen. They will be baked in about ten minutes if the stove is sufficiently hot.

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