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VOL. X. No. XXIV.
(NEW SERIES)

TORONTO, CANADA, DECEMBER 30, 1873.

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The Field.

Barley Growing.

The following interesting contribution to the *Country Gentleman*, on this subject, is from the pen of Hon. George Geddes:—

"In your paper of the 20th November, you say, 'We have frequently expressed surprise at the increasing neglect with which this important grain appears to be treated by our farmers generally,' and you ask for the reasons

"There is an unexplained something about the growing of barley that appears to govern its production. Formerly, barley was raised in great quantities in New England, and in the eastern part of New York, now very little is raised east of Utica. Thirty years ago, the south part of the County of Onondaga made barley a leading crop; now but few acres are there devoted to it. But lately the county of Jefferson raised barley that had a high reputation in the market, and now the 'fancy brands' must be raised on the shores of the Bay of Quinte, Canada. So few men govern the price of barley, that they are able to allow their imaginations full play, and pay about as suits them. Last year (1872), sixty cents was the price, this year, in defiance of the panic, the prices are much higher—nearly double last year. There is no staple produced by our farmers whose market price is so capricious. Very often a bushel of barley will sell for as much, or even more, than a bushel of good wheat. We once sowed our crop, in a year of good yield, at \$2 per bushel. The next year the crop was short, but what little there was, would bring at the most, seventy-five cents a bushel. The large crop of the one year remained, so much of it, in the hands of the malsters and brewers, that they appeared determined to indemnify themselves by paying a low price for the product of the unfruitful year.

"To illustrate the irregularities of the barley markets, I take the quotations of this morning, Nov. 25th: Chicago—No. 2, \$1.32; Buffalo—two-rowed State, \$1.23; (which is nine cents lower than No. 2 is at Chicago); four-rowed at Buffalo, \$1.40 for State, and \$1.45 for Canada grown, Syracuse, no buyers, Albany—two rowed State, \$1.37, four rowed State, \$1.55; No. 2 Canada West, \$1.65, New York—Canada East \$1.60, Kay Quinte, \$1.75, State two-rowed at \$1.35 to \$1.37.

"Why does Bay Quinte raised barley sell at 15 cents more per bushel than Canada East? Much inquiry has elicited the statement from the brewers that there is an unknown something in the soil or climate, or in both, that gives a finer flavor to the beer made from the barley of the Bay Quinte, than from that raised anywhere else; just as tobacco raised in Connecticut has something about it, that the consumers prefer to tobacco raised from the same seed in the central part of the State of New York. This is the final solution given to this matter, after trying for years to find out the facts. Barley is mostly made into beer, and whoever, in this country, engages in its production, should know the use that will be made of it, and the growers may as well understand that the fancies and whims of the drinkers of beer will govern the prices of different grades of barley, as the smokers govern the prices of American grown tobacco.

"Barley likes a clayey soil, and a cold, wet climate. So marked is the effect of soil, that in England the

farmers of warm, gravelly lands, are obliged to procure their seed from the strong, clayey lands; and the product of the warm lands in England called the 'rath-ripe,' and the product of the colder lands is called the 'common.'

"A season that is good for raising a corn is a bad one for barley. The hot days in June and July, that are so beneficial to the maize, are not good for the barley; and it is not often that the same farm produces maximum crops of Indian corn and barley the same year.

"To secure a good price for barley, or rather to have it of the best grade that any soil and climate can produce, great care is required so to handle it in harvest, and in so housing the crop, as not to have it get injured by wet weather. 'Black ends,' they are called, really injure the grain, and destroy its malting qualities. The grain should remain in the mow some weeks, that the heating may all be over before threshing. Thus the grain will be entirely dry, and the color good, if no injury was suffered in the field, and the crop went into the barn as dry as it should be.

"Threshing should be done with care; the teeth of the machine should not have sharp edges, and then run so close as to cut the kernels. Cutting the grain not only spoils so much as is broken, but in malting, these cut grains not only will not sprout, but they mold, and injure several grains that come in contact with them. This injures the beer.

"Following the example of the English farmer, let the seed be constantly renewed by procuring it from the places where the best grade is produced. Have it free from oats, or any other foul seed; sow early, selecting the strongest clay soils; harvest and thresh with care, and put the grain in the best position, and take all the uncertainties of the market. Sometimes the crop will be very profitable, but generally not more so than other farm productions. Inasmuch as all that is imported from other countries may be said to go to the making of beer, the makers of tariffs might lay a heavy duty on the produce of foreign countries, and thereby give our farmers some 'protection,' and oppress nobody—perhaps indirectly help the cause of temperance."

Value of Ashes for Potatoes.

On a small patch of land which I have cultivated this season to potatoes, ashes were applied in the hill at the rate of sixty bushels to the acre, save on one row, which was left for the purpose of comparison. On this no ashes were applied. On digging the potatoes, those from the row without ashes, and also those from the two adjacent rows were weighed. Computing the yield for an acre of each, the following is the result:—

Large Potatoes.	Small Potatoes.	Total.
Bushels.	Bushels.	Bushels.
One acre without ashes.....163	57	220
One acre with ashes.....260	37	297

If we take into the account only the large potatoes, the thirty-two bushels gained by using ashes at sixty cents per bushel, would amount to \$19.20. This sum divided by 60, the number of bushels of ashes to the acre, gives thirty-two cents per bushel as their value. Allowing for the labor of applying the ashes, and also for the excess of small potatoes from the ground upon which no ashes were applied, it would be safe to regard the value of the ashes at about twenty-five cents per bushel.

The ashes were from mixed wood, about two-thirds soft wood, and one-third hard wood. It is more than probable that from the dryness of the season the

beneficial effects of the ashes in the soil have not yet been fully realized. During the growing season, the row without ashes could not have been selected by the appearance of the tops. The two lots of potatoes have not yet been compared as to quality for table use. Those, however, which have been tested from land to which ashes were applied, are excellent. The Orono potato was used for the experiment.—M. C. F., in *Maine Farmer*.

Mr. Harris' Corn Crop.

In our notice last summer, of a visit to the farm of Joseph Harris, near Rochester, we briefly mentioned a fine 15 acre corn field, which had then been harrowed four times broadcast with a smoothing harrow, and was receiving the fifth dressing with the cultivator. Our own experience is, that stirring the surface once a week, or oftener through the season, adds from ten to twenty bushels per acre to the corn, and we are therefore not surprised when Mr. Harris reports seventy bushels per acre from that field, in a late number of the *Agriculturist*. He states that the land had been a badly run down field, weedy and stony; plowed last fall, and again in the spring, getting out all the stones practicable—harrowed and rolled. The following is his account of the crop:—

"The corn was drilled in, 3½ feet apart, with a grain drill. It was harrowed four times after planting, with Thomas' smoothing harrow, and cultivated nine times. The expense of cultivation was about as follows:

Fall ploughing with three horses	\$3 00 per acre.
Spring ploughing	3 00 do.
Harrowing three times	1 00 do.
Rolling, 25c.; drilling, 50c	75 do.
Four harrowings with smoothing harrow	1 00 do.
Cultivating nine times	3 75 do.
Hoeing	1 50 do.
Cutting up corn	2 25 do.
Husking—6 cents per bushel of ears.	8 40 do.
Drawing stalks, &c	1 35 do.

\$26 00"

The cultivating is put down at a low cost, as the horse went only once between rows at a time. The net profits per acre, allowing 60c. per bushel, and three tons stalks at \$10, are estimated at \$46 per acre, or \$690 for the 15 acres. The field was one of the cleanest we ever saw, which was largely owing, no doubt, to the four dressings with the smoothing harrow, all of which cost only one dollar per acre. Mr. Harris says that Mr. Phillips, of Michigan, pronounced it the cleanest field he ever saw.—*Country Gentleman*.

SUBSOILING VS. DEEP PLOUGHING.—The question of deep ploughing comes up once in a while in England, by the statement being made that all the fertility of the soil lies within four or five inches of the surface, and that to plough deeper will bring up the "cold stuff." It does seem, however, that on cold clay soils, a farmer is likely to be ruined by ploughing deep, but not by subsoiling, and it is important so consider this difference. By deep ploughing un-fertile and dormant clay may be brought to the surface, but by subsoiling, the roots of plants can descend deeper, and in a year or so the cold clay becomes fertile, when deeper ploughing can be done with great advantage. A simple observance of this rule would do away with much needless speculation, and form a safe guide.—*N. Y. Times*.

The Dairy.

EDITOR—L. B. ARNOLD, OF ROCHESTER, N. Y., SECRETARY
OF THE AMERICAN DAIRYMEN'S ASSOCIATION

Factory Cheese-making.

In regard to butter, it may yet be considered an open question, whether it is better to make it in factories or families. But with respect to cheese, no such question is now raised. Factories have the preference over dairies, first in the purchase of supplies by wholesale, and also in the cost of machinery for manufacturing; second, in the labor of making, which is now reduced to a minimum, and is advantageous to the farmer for relieving his family of a serious burden, which generally fell upon the women folks, who were hardly able to endure it. For the labor of twenty five hands, or more (one for each family), at the dairy, there is substituted three or four at the factory. Another equal advantage lies in the economy and application of skill. There are always some hands in every branch of manufacturing, who outstrip their fellows in skill in their respective arts. The labors of such workmen are of great worth in any calling, by reason of the increased value they give to the productions of their respective arts, above that of ordinary workmen. Factories can avail themselves of this superior skill; in families it would be impossible. The best workmen are but few in number. Their number is altogether inadequate to supplying lambs, and the high price of their skill would drive it out of nearly every private dairy. To pay a skilled workman \$50 to \$100 per month in a dairy of 30 to 50 cows would eat up all the profits, and a considerable share of the gross proceeds. Cheaper help must be employed in them, and, consequently, poorer goods turned out in the great majority of cases. Skill which would enhance the price of cheese from the milk of 500 to 1000 cows, one cent a pound could well afford to be purchased at \$100 per month, and leave a large margin for profit. The advantage gained by the application of skilled labor is generally enough to pay the whole cost of manufacturing. These advantages have proved a sufficient cause for factories supplementing private dairies to a very large extent, and of almost checking dairies. The extension of cheese-dairying is now made almost entirely under the associated system. It is a rare occurrence that a new private dairy is set up. Besides adaptation to the requirements of the markets in which it is to be sold, its greater uniformity in style, and quality above that in dairies, makes it more desirable to handle and to purchase. The inequality in style and texture in dairies are very great, and is a serious obstacle in marketing. Such a heterogeneous mass of goods as any considerable accumulation of dairy cheese must be, would spoil it for any market requiring uniform quality. Its market value must at least be depressed.

The advantage of having the skill of a single individual extended to the milk of a whole neighborhood, instead of a single dairy, has justly been regarded as of sufficient importance to make the factory preferable to the single dairy, and to ensure its adoption in nearly all the cheese-producing districts. It has subverted old established customs, and swelled the dairy industry into extensive proportions. But, great as have been the results of this economy of skill, it is now steadily growing into a wider application. The skilled superintendent now often presides over several factories instead of one. A half dozen factories are often placed under the control of one man, to share his superior ability. In one instance, thirteen were successfully managed by one superintendent, giving the benefit of his skill to the milk of several thousand cows. Such an economy of the best talent devoted to the art cannot fail to exert a wide effect in giving evenness and high quality to a large extent. Under

such a system, the manual labor can be performed by cheaper hands, thus reducing the cost of manufacturing, while the grade of the products is enhanced, the skill of the master hand is communicated systematically to many others, and the general standard of merit advanced. There are some objections to the present factory practice, which make a considerable offset to its advantages. One of these is the time and labor required to convey the milk from the farm to the factory. This amounts to about fifty cents per cow, for each mile the milk is transported. A second objection is the injury done to the milk by confining it in close vessels while in transit. The increase of foul odor that accumulates in milk in hot weather in its journey from the farm to the factory amounts to a serious item. The cheese from milk in which such odors have been allowed to accumulate, is injured in flavor, and decays prematurely. This objection might be easily done away with if the milk was properly handled by the farmers. A third objection arises in the disposal of the whey. It has proved somewhat difficult to get it away from the factory without more or less polluting the atmosphere of the premises, to the injury of the milk and cheese. But the greatest objection is the difficulty of making a just and equal division of the manufactured goods, by reason of inequality in the value of a given weight, or measure of milk. The milk of different herds varies considerably in value, according to the feed and treatment they receive. A herd packed for food, or drunk, gives milk greatly inferior to one well supplied. In examining the milk of eight different patrons of the same factory, where no material difference was supposed to exist in the milk, we found the dried curd in the poorest and best to stand the relation of 6.5 to 8.5. The former required 10.25 lbs. of milk for one of cheese, the latter a little less than 8. Greater inequalities exist doubtless in the herds of many factories, and in others probably less. They are seldom equal, or so nearly equal as to make a just, or even satisfactory division of proceeds, if the facts were fully appreciated. This objection is not irremediable. A more just apportionment can be made, and it will be made when farmers come to have a better understanding of the facts. In the extremes above named, the sample that yielded 6.5 per cent. of dried curd, was worth only 78 per cent. of the better sample. But while individuals lose something of their just due the public gain largely by the factory system.

Construction of Factories.

In the earlier days of associated dairies, factories were built and ran chiefly by joint-stock companies, and probably more than half of the factories are operated on this plan at the present time. The stockholders are made up for the most part of the farmers who intend to patronize the factory, and the stock subscribed generally in proportion to the milk each expects to furnish. From the numerous interests involved in the concern, a good deal of disagreement and difficulty, and altercation is apt to follow. A considerable number of factories built on this plan have either been abandoned or sold out, and the ownership centred in a single owner, when a more successful career generally follows. Latterly, the necessary building are more frequently erected by one man, or at most, by a few men, and the enterprise moves along more smoothly. In this latter method, the cheese is either made by the pound, for the patrons, or the milk is purchased by the owner, or owners, of the factory. When made by the hundred, the price varies from \$1.30 to \$2 per hundred, the maker furnishing everything. The average is about \$1.75. The circumstances which surround the erection of factories, are so varied that no particular plan, however well devised, could be made to suit all situations. There are, however, certain general features that ought to be regarded in all, and to these we may call attention. The site must have something to do in moulding the fashion of the buildings, and so also must the variety of cheese to be made, and the quantity of milk to be supplied. It is often necessary to provide apartments in the factory buildings for the family of the manufacturer, a circumstance which will modify the form, and size of the building, if but one is erected. The general facts in regard to what has been proved by experience to be essential to the well working of the factory buildings, was very concisely and clearly stated by Dr. L. I.

Wight, in a paper read before the American Dairymen's Association, at Utica, in January, 1871, from which we make the following extract:—

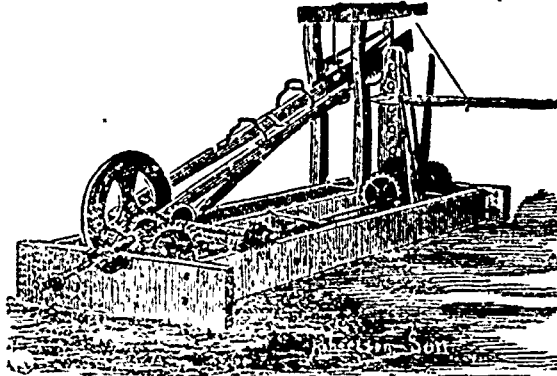
"The first thing to be considered in selecting a site for building, after having secured a sufficient number of cows, is a plentiful supply of cold running water. The quantity should not be less than sufficient to fill a two inch pipe, for the milk of every five hundred cows. The temperature of this water should not rise above 60 degrees in the warmest weather of summer. Instead of erecting the buildings over some low, marshy, swampy ground, where water, sloop, and whey will settle and stagnate, and infect the superincumbent air, as is too often the case, by all means select some dry, hard, airy location, a little descending to the rear, and with a continuous descent from the building, to ensure the escape of all decomposing liquids to a safe distance. The size of the main building should be thirty-two feet wide, two stories high, of eight feet each in the clear, and the length will depend upon the amount of milk anticipated. A building seventy-five feet long will accommodate the milk from five or six hundred cows. Let the posts be made very substantial, extending to a depth beyond the possibility of frost and not be over about ten feet apart in either direction. The main timbers, being ten by twelve inches square support three by ten inch posts, not set in grubs, but resting on the cross sills. The joists must be sound, and set not over sixteen inches apart, being well bridged. The flooring of the manufactory, made of well-matched sound, yellow, pine plank, inclines three inches from the front, to a substantial box drain made in the floor, four feet from the rear. The floor also inclines slightly from the rear to said drain. The drain drops from each end of the manufactory to the centre, where it enters another box which conveys all whey, sloop, etc., to a safe distance from the building. The entire outside is covered with well-seasoned, matched, sound pine siding. The entire sides and ends of the manufacturing part, inside, are ceiled with pint. The ceiling is well plastered. The curing rooms have floors laid with good, sound, seasoned spruce flooring. The sides are double plastered, so as to make two fixed air spaces. There need be no posts to support the floor. The second floor is supported by iron rods, suspended from bridges in the attic. The entire building is well lighted by double sash windows, which are supplied with good, rotary outside blinds. Thorough ventilation of the curing room is secured by the building being elevated so far above the ground as to admit of an abundance of air, and the insertion of large registers, in each bent, under every counter in the first and second floors; and by good ventilators through the attic floor and roof. By careful attention to these registers, and keeping the blinds closed in hot and sunny days, the temperature can usually be kept at a sufficiently low degree, even in the warmest weather. An ice chamber in the attic, so arranged as to register the cold, moist air into the curing rooms below, would likely at times be beneficial. The curing-rooms are supplied with counters twenty-four inches high, and three feet wide; each table being made of two seventeen inch wide pine plank, with a two inch space between them. Matched boards under cheese are objectionable, from the greater difficulty of cleansing, and the danger of skippers infecting the cracks. It is better to have the counters two feet distant from each other, for the convenience of the laborers, cheese buyers, and visitors. The manufacturing room will be separated from the curing-room below by a tight, double partition, with a large sliding door in the centre, between the two lines of presses. The length of the manufacturing, and pressing room, in a building of the size above mentioned, would be thirty-five or forty feet. The boiler room, and wood or coal room, will be erected at the end, and adjoining the manufactory, having easy entrance thereto. A building about thirteen feet square should be attached to the front of the manufactory, containing a driveway, and a receiving platform. The platform will be closed toward the driveway, except a slide window to receive the milk through, and be open toward the vats. The centre of this building will correspond to the centre of the vats, so that the receiving-can may stand equi-distant from each outside vat. The ground of the driveway is four and one half feet below the top of the weighing-can. The receiving platform is about one foot higher than the top of the milk vats. This building is supplied with means to hoist the cans of milk either by a crane derrick, or what is better, a hoisting wheel."

The addition of a small quantity of boric acid to milk, retards the separation of cream, and the milk does not become sour when kept several days. Beer, also, to which boric acid has been added, does not so quickly become hard.—A. Hirschberg in Arch. Pharm.

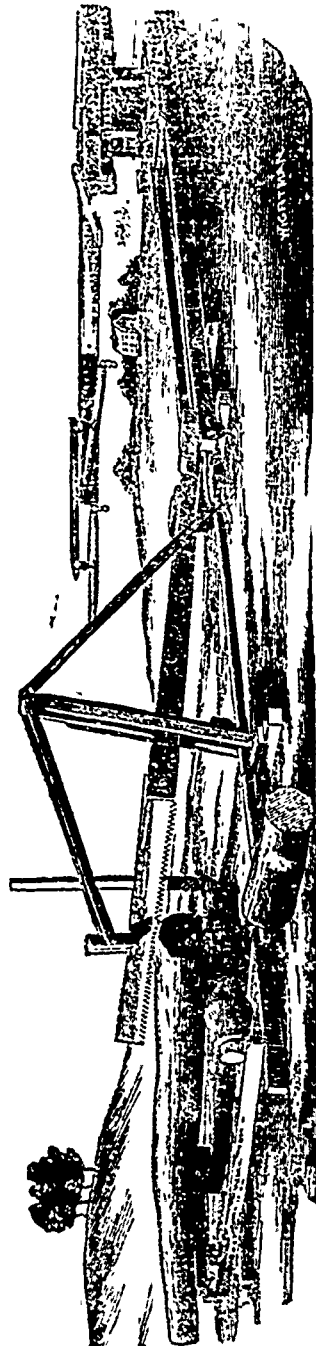
Emplements of Husbandry.

Drag and Other Saws.

As the period is fast arriving in Canada when the well-timbered farm means the farm of fortune; it



behaves every farmer who has a surplus of this precious material to dispose of, to make the very best of it. For such purpose anything tending to



No. 2.—Drag Sawing Machine for Two Horses.

save from the log-heap what must otherwise of necessity be burnt up with it, should be hailed as a boon. Now, it is a fact that thousands of cords of excellent fire wood are annually consigned to the flames, just because, mayhap, the timber is too knotty or tough to be split fine enough for market purposes, after it has been cut into proper cord-wood lengths. The chopping, in such a case, is looked upon as labor lost, and therefore the log or whatever it may be, is allowed to go to waste.

The power saw is designed to obviate such loss. Of course, the shorter wood is cut, the more easily it is split. To chop logs or trees with the axe into stove lengths would never pay, even at the present high rate of fire-wood; whereas, even if it should, the waste in the matter of chips would equal one-

fourth, perhaps, two-thirds of the wood saved. In these respects then the saw will prove a double econ-

omizer. Indeed many farmers employ the common hand cross-cut saw, in preference to the axe, not so much for rapidity of work, as for the saving already mentioned.

The Drag Saw, illustrated by our first cut in this article, is one got up peculiarly for farmers. It is intended for cutting stove-wood, stove-blocks, head-

ing, or shingle-blocks out of the log, and is driven by from two to ten horses, according to its size. The whole weight of its slides, guides, saw and pitman, bears upon the log being cut, thus keeping it steady, and enabling the saw to work with great rapidity. In it also the screw and worm for feeding up the log—such an objectionable feature in older ma-

chines—are dispensed with, and the use of spur-wheels substituted. It is likewise fitted with steel slides, and babbitt boxes. It is completely under the control of the man in attendance, who, by simply raising or lowering a lever at hand, putting the wheels in or out of gear, moves forward the log at his pleasure. By means of a break applied to the driving-wheel, he can at any time stop the machine in a few seconds. With the

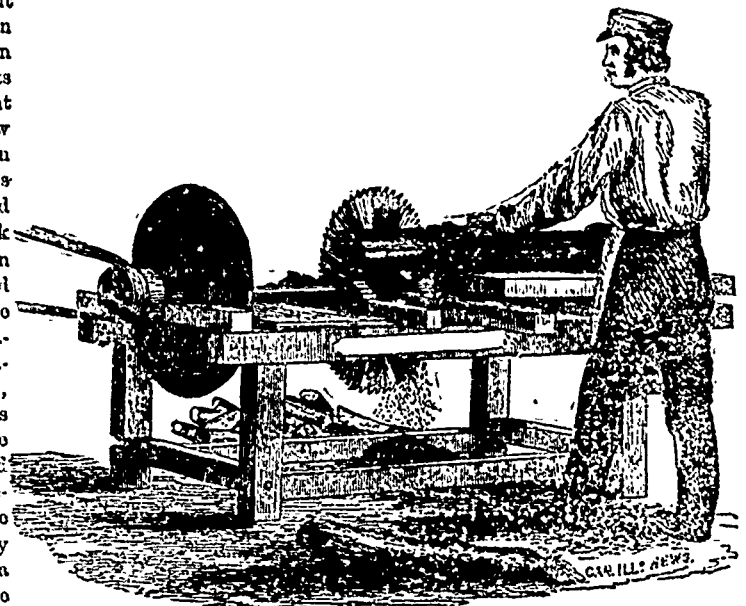
aid of eight or ten horses, and half a dozen men, this machine will cut from eighty to one hundred cords per-day. The power used may be Pitts', or any other ordinarily good one.

Cut second represents a Drag Saw for two horses, designed to serve all the purposes of the farmer, but of course less effective as regards quantity of work done than the other, in proportion to the power requisite to drive it. Being a cheaper machine, however, and one which works easily and well, we presume it will be more generally used than its more expensive rival. This machine can be loaded on a waggon or sleigh, being comparatively light, and moved about quite handily. It is also fitted up completely with a logging and jiggging apparatus, and is altogether easily managed.

By removing the saw and pitman, the power may be utilized in various ways, such as straw-cutting, root-cutting, chopping feed, &c.; in all cases saving the labor of at least two horses; for there are but

few powers, i. e., ordinary ones in the country but require at least four horses to drive them.

Our last cut shows, for the benefit of those who prefer it, the latest style of circular saw, to be run by horso-power. The fly-wheel, it will be observed, is not only heavy of itself, but surrounded by an enlarged periphery, which adds



No. 4.

materially to its momentum, and facilitates the driving.

A GARDENER'S BAROMETER.—The common camphor bottle makes a very cloudy index of atmospheric weight and weather changes, on which the following is a beautiful improvement: "Dissolve 2½ drachms of camphor in 11 fluid drachms of alcohol. Put 38 grains of nitrate of potash (saltpetre), and 38 grains of muriate of ammonia (sal ammoniac) into 9 fluid drachms of water; when all are perfectly dissolved, mix the two solutions. Shake them well in a two ounce or 4 ounce white glass vial, cork very loosely, or better, tie over the orifice a piece of linnen or cotton cloth, and place the instrument in a good light out of the sunshine, where it can be observed without handling. When the weather is fine and clear, the fluid is also; but on the least change, the chemicals which lie as a sediment, rise in beautiful frond-like crystals proportionately, and again duly subside. By watching these changes, one soon becomes able to predict the changes of weather probable for a few hours to come, in any locality, but not for all alike. This instrument may be recommended also as a pretty philosophical toy, with a problem annexed.—Cultivator.

GREASING BUGGIES AND WAGGONS.—Greasing buggies and waggons is of more importance than some imagine. Many a wheel is ruined by oiling too plentifully. A well made wheel will endure constant wear from ten to twenty years, if care is taken to use the right kind and proper amount of oil; but if this matter is not attended to, the wheel will be used up in five or six years, or it may be sooner. Lard should never be used on a waggon, for it will penetrate the hub, and work its way around the tendons of the spokes and spoil the wheel. Castor oil is a good material for use on an iron axle; just oil enough should be applied to a spindle to give it a light coating; this is better than more, for the surplus put on will work out at the ends, and be forced by the shoulders and nut, into the hub around the outside of the boxes. To oil the axletree, first wipe the spindles clean with a cloth wet with turpentine, if it won't wipe without it. On a buggy or carriage, wipe and clean off the back and front ends of the hubs, and then apply a very small quantity of castor oil, or more especially prepared lubricator near the shoulder's point.

No. 3.—Applied to a Straw-Cutter.



Horticulture.

EDITOR:—D. W. BEADLE, CORRESPONDING MEMBER OF THE ROYAL HORTICULTURAL SOCIETY, ENGLAND.

Pruning Roses.

One of the most important things to be attended to in the rose garden during the coming month of March is that of pruning. Some growers have expressed the opinion that November is a good time for this operation to be performed, but the greater number recommend that it be done in February. I am altogether opposed to the system of autumnal pruning; and, although I will not go so far as to assert that February is too early in all seasons, I am strongly of opinion that March is quite soon enough for hardy sorts, and too soon for the China. By hardy roses I understand the whole tribe of summer bloomers, generally comprised under the divisions of moss, Provence, hybrid Provence, French damask, alba, hybrid China, hybrid Bourbon, hybrid noisette (a distinct section, although not generally recognized), Australian briar, sweet briar, Scotch, and the several families of climbing roses. Of autumnal bloomers, the perpetual moss, damask perpetual, hybrid perpetual, and Bourbon families must be included in the category of hardy roses. Shall any especial order be observed in pruning these different sorts, or shall they be taken hap-hazard? I have seen it laid down in books that the moss, Provence, French, alba, Damask, and Austrian briar should be first pruned; then the hybrid China, and Hybrid Bourbon, and next the damask perpetual, hybrid perpetual, perpetual moss, and Bourbon. Now, I beg to differ from this view of the case. I recommend, whether large or small, to apportion the plants in three equal parts, taking care that the different families are fairly distributed among the whole, and to have three great prunings—namely, at the beginning, middle, and end of the month; or, supposing this to be troublesome, if a thirtieth part of the entire number (taken as they come) were pruned every day during the month, the same object would be obtained, that object being a prolongation of the blooming season. Now, simple as the operation of pruning a rose-bush may seem, it is really one requiring the exercise of considerable judgment. The truth is that, although general rules may be laid down, there will occur numerous exceptions. These can only be learned by practice; I can only pretend to give general directions, leaving the rest to be taught by the best of all school-masters—experience.

Rose-pruning is of three kinds, viz., close pruning, long pruning, and moderate pruning. The first method is applicable to all such roses as are of dwarf habit, and compact growth, producing shoots on which the bloom buds are closely set. In this list may be included the families of moss, Provence, gallica, alba, damask, and Austrian roses. All these require close pruning; that is, the shoots to be cut back to within an inch or two of the old wood, leaving only two or three buds at the base. Long pruning must be used for such sorts as are very vigorous growers, many of these produce shoots from six to ten feet long, and if these were subjected to the close system of pruning, not a flower would be produced. The sorts requiring long pruning include nearly all the hybrid China, some of the hybrid Bourbon, the more vigorous among the Bourbon, and a large proportion of the noisette tribes. In all these the shoots must be well thinned, taking care to remove those likely to militate against the production of a handsome, symmetrical head, the remaining shoots must be shortened to a foot or eighteen inches, according to the habit of the plant. There are a few of the hybrid Chinas, in which it is necessary to leave the shoots nearly all their entire length, merely removing a few inches of their extremities, of sorts requiring this treatment, the fine old varieties, Beauty of Billiard, Brennus, and Fulgens, are examples. In the course of a few years roses thus treated will become straggling and unsightly, when this occurs, they must be cut back within an inch or two of the crown, when fresh buds will push, and a new head be formed. If this is done immediately after the plant has bloomed, there will be plenty of time (in ordinary summers) for the new wood to mature itself, and thus the loss of one season's bloom will be avoided. If the wounds are immediately covered with some styptic, there will be no bleeding, otherwise the plant might be much exhausted, if not actually killed, by the loss of its juices. Moderate pruning is a sort of compromise between the other two methods. It consists in shortening the shoots to within six or seven inches

of the old wood, and is the form of pruning best suited to the more robust-growing varieties of French, damask, and hybrid Provence roses, the most vigorous of the hybrid Chinas, and hybrid Bourbons, and those of medium growth among the Bourbons, and hybrid perennials. The pruning of the China, and tea-scented roses, together with such of the noisettes as claim affinity with them, should be deferred until April.

The main object to be kept in view in the pruning of roses, is to secure abundance of bloom; but there is another which also ought to be born in mind—the proper form from which the bush, or tree, may be desired to assume. Under this head, Mr. John Cranston has recorded some useful and suggestive information in his "Cultural Directions for the Rose." He states, "I know it will be found somewhat difficult to obtain a proper and uniform shape with all kinds; there are some which will, in spite of all pruning, grow as close in the head as a hem. Others will start off anyhow, one shoot frequently taking the lead, and, if allowed, will grow to such an extent as to entirely rob all the other parts of the tree, the plant soon becoming a one-sided, rambling-looking object. To avoid this, examine at pruning time all such trees as are liable to grow into this form, and cut out entirely any shoots which are observed to be gross, and over-robust. All shoots left after pruning should be as nearly equal in size as possible; this will ensure uniformity of growth upon all sides. If, however, as is sometimes the case, a vigorous and gross shoot should appear, which cannot be well dispensed with, it should be stopped when it has grown six or eight inches; the lateral shoots afterwards produced may be again stopped when two or three inches in length. The erect growing kinds are, again, somewhat difficult to bring into shape, as no pruning will prevent their growing into a close, compact head, with the flowers all at the top of the tree, so that they cannot be seen on a moderately tall standard; such sorts are best grown as low bushes, or as standards of medium height. During the growing season, where the shoots have become sufficiently hardened to bend without breaking, let the lower shoots be brought down and tied to small wooden, or iron hoops, placed underneath the head of the tree, and in like manner bring the middle and upper shoots down. After this has been practiced for about two seasons, the plant will have assumed a proper shape, and then can easily be kept so, and that without the assistance of the hoop, or further tying. Before commencing to prune, it is necessary to observe the habit of the plant, whether it be a vigorous, moderate, or dwarf-growing variety; also to determine what kinds are required for exhibition purposes, as these will want somewhat more careful pruning and thinning. Carefully thin out from the head, by clearing away all small, and crowded branches, likewise all gross, unripe shoots, leaving such only as are composed of firm, and well-ripened wood, and these at regular, and equal distances. Prune down according to the strength of the shoot, and habit of the variety, in some cases to two or three inches, in others, where the habit is vigorous, one foot, or even eighteen inches will not be too long for a shoot to be left; but, as this will depend upon the habit of the variety, and shoot to be pruned, no absolute rule can be given. In shortening the shoots, cut close to an eye, observing, where practicable, to leave well-swollen, plump buds, which invariably produce the finest blooms, likewise secure those having an outward tendency, and pointing in a direction proper for the handsome formation of the plant."—*The Field*.

The Winter Flowering of Zonal Pelargoniums.

Unlike many growers of these charmingly varied and useful decorative plants, I grow my collection mainly for autumn and winter blooming, instead of for summer flowering. It is during the months of October, November, and December especially that our conservatories are destitute of the cheering influences of flowers. I like bright colors during the dull leaden days of winter, when all is dark and gloomy without; and the rich hues of scarlet, rose, crimson, and red are abundantly supplied by zonal pelargoniums. In March last I obtained about two dozen of the newer varieties of zonal and nosegay pelargoniums, all of them growing in small 60 pots. As soon as the roots became somewhat pot bound they were shifted into 48 pots, and flowered; and though I had left the selection of varieties entirely to the nurseryman who had supplied them, I am bound to say it was so good that there was not one among them I cared to discard. During the time the plants were getting established in the 48 pots I allowed them to bloom, but as soon as there were signs of the plants becoming pot bound they were again shifted into 32 pots, and the plants cut back, so as to form nice "bottoms," as it is termed.

The plants are now thoroughly establishing themselves in the large pots; they are making a vigorous growth, and blooming well and freely, and by keeping them fairly dry I hope to have them in flower up to February. Nor is this all, for when the plants are cut back, the cuttings so obtained are inserted singly in thumb pots, in which they soon root, and are then shifted into small 60 pots. Many of these have developed into nice young stocky plants of a vigorous growth, and are throwing up tufts of fine flowers. In the case of both the young and old plants, as soon as they have done blooming they will be allowed to dry off, and in April the soil will be shaken out from the roots, the roots trimmed, and put into 48 pots, and again shifted into 32 pots as before, for autumn flowering. When the bottoms become too large they can be thrown away, and their place supplied by some of the cuttings struck as above stated. Some of the varieties, too, can be rejected as they become distanced by the superior merits of other types.

Some of my favorite varieties are—Wellington, Henry King, very fine crimson hue, flowers of splendid form; Richard Dean, very fine, Harry Turner, very fine brilliant red; Lawrence Heywood, Cham, Carrie Cochran, Marchioness of Hereford, Mercy Grogan, Forbury nosegay, Glitter and splendor—all shades of red, crimson and scarlet, Circulator, very fine; Charles Dickens, a beautiful salmon-rose nosegay, the petals distinctly margined with red, and Polly King, one of the finest salmon-colored varieties yet raised; these have shades of salmon. Master Christine and Mrs. Keeble, both pink flowered varieties, the former very free of bloom. Of pure white flowers slightly blotched with carmine, there are Mrs. Sach, Reine Blanche, Alice Spencer, Marginalia, a beautiful variety, Madame F. Hook, and souvenir de St. Etienne, the purest white zonal I have yet met with. I do not advance this as a model or complete collection; I have found the several varieties to be very distinct in character, and all are more or less characterized by great freedom of bloom. My last variety is one of the finest zonals I have flowered, it is named Purple Prince, and the rose crimson flowers, which are of very fine quality, are handsomely tinted with purple.—*R. D. in Field*.

New Flowers.

Among the new flowers of the spring of 1872, I found a rich deep rose colored Zonale Geranium, named *Beauty of Lee*, which was very pretty, and also *Lanthe*, a splendid shade of magenta, *L. Pice*. *Hyacinth* is also fine, and of a dazzling shade of orange scarlet.

The Echeverias are succulent plants which are becoming very popular now, they are of the same genus as the House-leek, with thick leaves, but their flowers are quite attractive, being red and yellow, and they make very pleasing window plants, as well as for bedding-out. *Echeveria metallica* is a showy plant, its leaves being of a peculiar lilac shade with a metallic tinge, and its flowers spring from a stem a foot in height. *Echeveria secunda* and *scandula glauca*, have a rich gray foliage with a silvery tinge, which contrasts prettily with the *metallica*, and make a very desirable edging to a variegated bed of plants. This genus of plants blooms finely under our hot suns.

There are new Hydrangeas which make a great addition to lawn plants. They bloom in immense cluster of light pink flowers, and their leaves are handsome and glossy. *Hydrangea Otakea*, a variety from Japan, is a beautiful ornament to every garden. *Diplopappus chrysophyllus* (has syllables enough in its name to insure its remembrance,) is a new shrub with evergreen foliage, the lower side of each leaf being covered with yellow dust, such as is seen in the Golden Fern. It is said to be perfectly hardy, and also very ornamental.

The White Grapo Myrtle is a lovely flower, nearly hardy, and blooms profusely, and makes a lovely contrast to the dwarf Pomegrante James Vick, which grows like a thorn tree, and is covered with brilliant scarlet flowers.

A new monthly Carnation, the Peerless, is an exquisite variety of white, shaded to blush, a prolific bloomer with perfectly shaped buds and flowers which are very fragrant.—*Country Gentleman*.

DEUTZIA HEDGES.—*Deutzia scabra* is a very attractive plant when in bloom; it is quite hardy, forms a dense mass of foliage, and appears eminently adapted for a hedge or screen. It bears the shears with impunity, puts out its foliage early and holds it late. Those who desire a neat little hedge or screen where animals cannot injure it, will find this excellent for the purpose.

Asparagus—How to Grow it.

A garden is not a garden without its asparagus bed; and yet, how many families have what they call a vegetable garden, and no asparagus in it! How has this happened? Perhaps the leading spirit in these families has been too much occupied with other matters, and the matter of asparagus in the garden was not thought of. Or, it may be, the thoughts of having to wait two or three years for the harvest has stayed any movement in this direction. Or, possibly, some may have regarded asparagus culture as something "too high" for them. They have read about the deep trenching, and pains taking, and salt-spreading, and all that, and they don't care to think any more about it; and they will go without their greens if they must grow them.

But let me tell you there is a fascination about this crop for me—but be sure that I do not do all that the books say; nor do I do it in just the way they say. I will tell you what I do:—

If I can, I save my own seed, selecting a few large strong seed stocks, and gather when ripened. I prefer to sow my seed in the fall—spring will do—in drills 2½ feet apart, and cultivate with plough and hoe. At one year old the plants are large enough to be set in a permanent plantation, where they stand in rows 3½ feet apart, by 2½ feet in the hill. The books tell us to set in rows with only "9 inches" from hill to hill. This is entirely too close if you mean to grow large asparagus. Of course, with us, land is cheaper, and favors my practice. I contemplate setting a plantation four feet apart each way, and shall expect the best results from it.

Asparagus will repay good culture, and heavy manuring, and it in your power to give it, don't withhold it. But, plant asparagus in any case, for family use; it will return you a most grateful dish in the spring, even if you were not kind to it. It may seem wicked, but I question the beneficial effects ascribed to salt on this crop.

I don't plant my asparagus ten inches under ground, as recommended. I make no efforts to blanch the stalks of asparagus. I cut above ground, and prefer to eat my asparagus green and not white; and so will anyone, whose prejudices are not stronger than his appetite.

Again, you read recommendations to top-dress the asparagus bed in the fall, with manure. This is wasteful, for the winter rains, and other agencies will carry off the manurial properties, and leave, at best, a mulch, which, if that were the object, had better have been some cheap material, as straw, or other litter. The time to manure all crops is in the spring, just as growth is ready to start. I cut a full crop the fourth year from the seed, "and expect to do the same to the end of life;" for an asparagus bed once rightly made, and carefully cared for, is a "joy for ever," so far as he who planted it is concerned.

It is the practice of some in this neighborhood, and elsewhere, to mow off the asparagus plants during summer, and two or three times during the season—with a view of destroying weeds, and preventing the asparagus going to seed. I don't like the sound of this—cutting off the tops to increase the roots. I could not so object to cutting out the seed stock before ripening, as the ripening of seeds is said to draw most heavily upon the life of the plant.

But some will ask, *Does it pay to grow asparagus?* Why, yes. It pays to grow almost anything wanted in the markets, and I am not sure, if this be not one of our surest and most profitable crops.—*Boston Cultivator*.

Ferneries and Soap.

There will doubtless to many occur the question upon reading the heading to this article, "What possible relation can there be between ferneries and soap?" Let us explain: Every one who has a fernery or Wardian case, whether it be a simple bell-glass or a more elaborate case, with a frame and sides of plate glass, has found one annoyance—the condensation of moisture upon the glass. The soil of the fernery must, of course, be moist, and the inclosed atmosphere must be moist also. Whenever from any cause the temperature of the glass becomes lower than that of the atmosphere it incloses, moisture will be deposited, and the glass will be obscured by either a fine dew or by large drops and irregular streams of water. J. B. W., of Windsor Locks, Ct., set himself to work to overcome this difficulty, and in a communication to the *Hartford Curant* tells of his success. The method is the simplest imaginable. If the fernery is covered with a bell-glass shade, rinse it out with a strong solution of soap. If the frame is one of plate glass, sponge it over with the same. When we saw the article, we tried the experiment by sponging over one-half of our quadrangular case

with soapy water. It has been done now for several days, and the soaped portion is perfectly transparent, while the rest is for the most of the time so obscured by drops of water as to render the contents of the case nearly invisible. Where the water collects in globules, there is an imperfect adhesion between the water and the glass. A thin film of soap establishes such an adhesion between the moisture and the glass that drops are not formed, but the condensed vapor spreads itself evenly. The soaping needs to be renewed once a fortnight, or as often as experience shows to be necessary. In the article referred to, J. B. W. cautions against handling a shade with soapy hands. We, on behalf of our readers, thank J. B. W. for calling our attention to this very clever "dodge," which has much increased our enjoyment of our own fernery, and will doubtless be found useful by many others.—*Hearth and Home*.

Uses of Grapes.

Men can live and work on grapes and bread. The peasantry of France, Spain, and Italy, make many a satisfying meal in this way, and of the wholesomeness of the diet there can be no doubt. Medical men constantly recommend the use of grapes for their patients. Scarcely any plant can equal the vine as regards the beauty of its leaves and fruit. As a covering for bare walls, and for affording shelter, and shade, it is a climber of the first rank. To sit under one's own vine, has in all ages been considered the acme of rural happiness, an emblem of peace, a symbol of plenty, and a picture of contentment. That pleasure, though perhaps not in all its fulness, may become the heritage of thousands in these temperate climes. Neither our latitude, longitude, nor leaden skies, nor erratic climate, forbid the growth of the grapevine throughout the larger portion of the kingdom. In many districts its fruit will ripen more or less perfectly. In almost all it would ripen sufficiently to be useful for eating, or wine making. Even green grapes are useful for conversion into vinegar, for making tarts, or for wine. Ripe grapes are universally esteemed. No one tires of them. If any declined to eat their own grapes, or grew more than were needed for home consumption, there is a ready market in most neighborhoods for grapes, at from fourpence to a shilling a pound, according to quality. Thus a flourishing vine on the gable end, or front of cottages, might make or save the rent many times over. I know many cottage-gardens in which the vine, or vines, are not only their chief ornaments, but the main source of profit. These might be multiplied up and down the country to infinity. As a means of increasing their number, I would suggest that prizes be offered by all cottage-garden societies for the best trained, and most fruitful grapevines on cottages. I have known this done to such excellent effect that the vines became models of both; and such a spirit of emulation was stirred up that one laborer had paid another two days of his wages to do up his vine for him. There need be no fear of an excessive supply; neither are ripe grapes so perishable as most other fruits. Cut with a piece of wood attached, and placed in bottles of water, or even suspended in a dry room, the ripe fruit will keep good for months, and even improve by keeping. Besides, the grapes that are not eaten, can readily be converted into a cheap beverage. The prejudice against home made wine has hardly reached the laboring classes. On the contrary, there are few of these who do not contrive to make a few bottles of elder, currant, primrose, gooseberry, or rhubarb wine. Those of them who grow grapes mostly try their hands likewise at real wine-making. All this is better than nothing but beer, cider, or gin. I have known cases, not a few, in which a little home-made wine in the cupboard has proved the strongest attraction to keep husbands at home.—*The London Garden*.

A SIMPLE ORNAMENT—A pretty mantle-piece-ornament may be obtained by suspending an acorn, by a piece of thread tied around it, within half an inch of the surface of some water contained in a vase, tumbler, or saucer, and allowing it to remain undisturbed for several weeks. It will soon burst open, and small roots will seek the water; a straight and tapering stem, with beautiful, glossy, green leaves, will shoot upward, and presents a very pleasing appearance. Chestnut trees may be grown in the same manner, but the leaves are not so beautiful as those of the oak. The water should be changed once a month, taking care to supply water of the same warmth; bits of charcoal added to it will prevent the water from souring. If the little leaves turn yellow, add one drop of ammonia into the utensil which holds the water, and they will renew their luxuriance.

European Larch as an Ornamental.

While the many excellent qualities of the European Larch as a timber tree, have been and continue to be urged upon us, I have sometimes feared that its great value for ornamental purposes may have been in some degree overlooked. This was again forcibly brought to mind the present autumn. For weeks after nearly all other deciduous trees had shed their leaves, the larches here were brilliant in all the various shades of orange and yellow, lengthening out the beauty and brightness, which but for them would have been wanting in the landscape of the fading year.

Their appropriate place seems to be scattered among evergreens, or in front of evergreen screens or groves. In such situations, the contrast between the deep green on the one hand, and the rich coloring of the larches on the other, is exceedingly fine. The young leaves appear very early in spring, and their peculiar soft yet bright shade of green, with the graceful weeping habit of the smaller branches, sufficiently distinguish them from the more sombre shade and stiffer growth of the evergreens. In a small grove on our own place, containing eight or nine kinds of evergreens and a few larches, the most casual observer will, any time in spring or early summer, notice the larches at once, and probably remark that they are the most beautiful trees in the lot. Some object to them on learning that they lose their foliage late in the fall; but surely it is better thus than to miss the beautiful tints that linger as if loth to depart, sometimes, as in a few thrifty specimens of ours the present autumn, until December.

There is no objection to their use quite near the dwelling, as they are bright and fresh looking even in winter, the young wood being beautifully striped. Their excellent habit of starting so early in spring, suggests fall planting, or very early in spring, though with care and despatch, they can be moved after becoming quite green, especially if a pailful or two of water is poured into the hole after being nearly filled, and when soaked away topped out with dry earth, and mulched immediately.

These remarks are made not only because the European Larch is a favorite, but with the hope of hearing from others on the same subject.—*Michigan Country Gentleman*.

A new grove of "Big Trees," for which California is famous, has been found on the Coulterville route to the Yosemite Valley. The new grove has been named the Merced Grove of Big Trees. It is said to be fully equal to either the Calaveras or Mariposa Groves, and is easy of access, being on a direct line to the Valley. One of the trees is said to be 75 feet in circumference.

A METHOD OF GRAFTING WEEPING TREES.—We observed in Messrs. Osborn's Nursery, at Fulham, a new method of grafting in the case of weeping trees. It consists in working them on dwarf stocks, so as to admit of the plants assuming their natural habit from the ground upwards. Of these three good examples may be found there, viz., a Kilmarnock Weeping Willow, a Weeping Beech, and a cut-leaved Weeping Birch. These all present a much more natural appearance than weeping trees do when worked on high naked stems, which hitherto has been the practice generally followed.—*The Garden*.

SHADE FOR GLASS HOUSES.—The best permanent shade for plant houses is linseed oil and sugar of lead, in the proportion of about a teaspoonful of lead to a quart of oil; but the exact trial must be governed by the amount of shade required, which can easily be proved by trying it upon pieces of waste glass. First, wash the glass thoroughly clean, and then, on a dry, clear morning, take the oil mixture, and paint as thinly as possible over the glass with an ordinary paint brush. By dabbing it gently with a dry brush, it will impart to it the appearance of ground glass. The shading will stand for a season, and can be removed by washing it with a strong pearl-ash water.—*New Jersey Mechanic*.

The Isle of Wight is remarkable for its gigantic Fuschias, Myrtles, and Hydrangeas; but more remarkable than all these are its gigantic Yuccas. Of these last one may be found in the gardens at St. Clare, 11 feet high, with a stem, at 2 feet from the ground, 11 inches in diameter. It is much branched, and in order to prevent the wind from injuring it, the branches are clasped and otherwise supported. There are also other fine specimens in this garden, as well as in the gardens at East Cowes Castle, where the largest is over 10 feet in height, and has a stem some 9 inches through. This, like the others, has to be kept in position by means of artificial supports.

Correspondence.

Cattle Running at Largo.

(To the Editor of the CANADA FARMER.)

SIR:—I disapprove of the custom of allowing stock of any kind to stray along the road lines, and ramble in the bush. Probably no one will deny that stock thus turned at large are, in general, nothing but a public nuisance. That they do a great deal of mischief by breaking into meadows and cultivated land, no one is likely to deny; and I expect that a good many of the sufferers from the encroachments of breachy cattle, will agree with me in estimating the damage they do to growing crops, at a sum about equal to the value of their keep. I know it is a very difficult matter to estimate the amount of damage any growing crop has sustained by a casual trespass, and for that very reason it is, I believe, almost invariably greatly under-estimated. Besides the injury thus directly done to the farming community in general, the profit made by those owning the cattle, is diminished by the value of the time spent in searching for them (especially their milking cows), and in driving them home. The time thus wasted, if entered in some book every day, and added up at the end of a week, or a month, would often foot up to a total that would surprise one; and, in crop-time this is a matter of very serious consideration indeed, as delay and hindrance *then*, is well nigh irremediable. Then there is to be considered the damage to the milking qualities of the cows themselves, which results from irregularity in their hours of milking. Many a settler who now allows his cows to graze in the bush, would actually be better off at the year's end, if he fed but half the number abundantly in a good pasture, and always had them milked at regular hours. Of the importance of a consideration of the loss of time spent in hunting for cows, take the following instances, which happened to fall within the observation of the writer during the past summer: A hard-working, industrious man, spent almost five hours a day, three times in one week, in searching for, and getting home his cows, night and morning; and at that time, too, it was getting rather late in the season for planting potatoes, and he had at least two acres more to plant, if possible. They had to be killed in with the hoe, and he could hire no help. About the same time, too, the same man had to stay a night in the bush. It happened as follows: He did not find his cows till after nine o'clock, and it was quite dark; his home lay, in a direct line, about a mile and a half away, but as there was a rather bad bit of tamarack swamp right in his course, he felt constrained, although he was a pretty good bushman, to wait till sunrise before he attempted to drive them back to his farm. He was, of course, supperless, and after having been all the long night through badly harrassed by the mosquitoes, he was not in, by any means, good trim for doing a long, hard day's work. His cows, of course, were un milked, and three days afterwards, his wife said that their yield of milk was still diminished by it.

I have known another lot of cows that were also rambling at large in the bush, to go un milked three different times in a fortnight; one time out of the three, they missed two meals of milking, and were away more than thirty-six hours. The actual time wasted in the search for them this one time, I do not know, but it was no small time. For a short while, two men were out in the woods after them, but they were old countrymen, and not as good hands in the bush as the man (a native Canadian), who spent a night last May in the swamp. Many a bush-roaming cow gets permanently injured in her milking qualities, and the better they were for the pail, the greater would be the injury done them. A cow that was not milked for 36 hours, would, probably, be diminished in her yield of milk for the whole of the summer.

There is another evil to be mentioned, only an occasional one, it is true, but of still greater importance, as it now and then results in loss of human life. Scarcely a year passes by without some newspaper having to record a search for children sent into the bush to bring some cows or working bullocks, and now and then, alas! to give the sad news, that the efforts of the neighbors to find them while alive, had proved futile. I also believe that the practice of allowing cattle to wander along the roads, greatly discourages, and often puts a stop to the practice of planting out trees to shade and ornament our highways. These roaming cattle greatly increase the expense of protecting the young trees, and kill out, in a great many of those that fail to grow.

Lastly—This practice of allowing cattle to wander at large, almost obliges every settler to keep a pack of dogs to hunt the brutes away from their cropped lands and meadows, and thus, by directly increasing the number of useless, yelping curs that are regularly trained to go in, following after any animal that will run, and beset and snap at any animal that they overtake, or that won't run. Stray cattle add largely to the number of sheep-killing dogs to be found in every neighborhood, and even in the wildest of Canadian settlements, more sheep are killed by dogs than by wolves. This dog difficulty is the the sheep farmer's bogy, the lion in his path, even in the most favored parts of Canada, and presses hardest on the owners of the most valuable breeds of sheep; for the compensation allowed for worried sheep, can only replace the most inferior kind of animal, and the compensation never very willingly paid by the municipality, sometimes costs more to get it than it is worth. This is one great hindrance (isn't it the great hindrance?) to the introduction of a regular system of sheep husbandry, a great waste of Canadian agriculture. It increases the difficulty experienced by farmers, all the country over, in providing a sufficient supply of manure to keep up the fertility of their land; and in those backward and newly settled districts, in which only stray specimens of a mongrel and unthrifty sort of sheep are now to be found; the dog difficulty checks the increase of the present small flocks, which, mongrels as they are, are better than no sheep at all, and prevents any attempt being made or at any rate, is a standing excuse for no attempt being made to introduce a more valuable or improved breed of sheep.

PHILIP

P. S.—I do not think I have even now attended to all the mischiefs that are caused by wandering cattle. Sometimes a whole neighborhood is set by the ears, and quarrels, and a law suit or two, as well as permanent ill blood is the result. Occasionally they are stolen, with but little chance of the theft ever being proved; but even if half of the disadvantages that seem to be inseparable from this system are real, I don't think I have exaggerated any one of them. The actual benefits of the system to those who practice it are very small indeed, and do not anything like make amends for the loss and damage done to the agricultural community in general. P.

The Duchess and Oxford Short-horns.

(To the Editor of the CANADA FARMER.)

SIR:—There has been a good deal said lately in the agricultural papers, concerning the enormous prices paid for the Duchess cattle at the great sale at New York Mills, some approving, others disapproving of them. Some argue that they are little, or no better for breeding than cattle with mixed pedigrees. In my opinion it is quite necessary to keep up the standard of our stock, and give them character, so that we may have some pure strains of blood. There are very few breeders but will admit that no strains combine so much excellence as the Duchess and Oxford strains. Two or three crosses will, as a rule, bring animals nearly equal to the pure bred

ones, but if these cross-bred bulls were again used, there would be a gradual falling off, hence the necessity of having thoroughly pure-bred males. But I cannot see the wisdom of giving so much more for the Duchesses than the Oxfords. It will be seen by referring to the pedigree of the 12th Lady of Oxford, that the six latest crosses were pure Dukes, leaving her 95 7-6 per cent Duchess blood, and she was sold for \$7,000, being the highest priced Oxford at the sale, with one exception. If we examine the pedigree of the 5th Duchess of Geneva, it will be seen she was sired by 3rd Lord Oxford, a pure Oxford, leaving her virtually only 50 per cent of Duchess blood, and she was sold for \$40,000. For generations back, they have been almost indiscriminately bred together, making them now identical in blood. Now, if you, or any of your numerous readers, will give a valid reason for so much difference in the prices of the respective tribes, I shall be thankful.

STEPHEN NICHOLSON

Sylvan, Ontario.

Sample of Wheat from British Columbia.

(To the Editor of the CANADA FARMER.)

SIR:—I have this day forwarded you a sample of wheat, grown by Henry Cogan, M.P.P., at his farm at Craigflower, near Victoria, which took the first prize at the Provincial Agricultural Exhibition, held lately in this city. I forward the sample to you, as I have been a constant reader of your valuable paper, and know the interest you take in anything in the farming line. I hope you will compare it with any samples you may have belonging to other Provinces, and let British Columbians know through the medium of your paper how it compares with Eastern wheat.

BRITISH COLUMBIAN.

Victoria, B. C., Nov. 3, 1873.

NOTE BY ED. C. F.—We have duly received the package of wheat referred to by our correspondent in the above communication. It is a very pretty sample of white wheat, of beautiful color, and well-rounded, plump looking berry, but averages rather small, as compared with our best samples here. It is also uneven as to size of grain. An excellent quality of flour will no doubt be yielded by it. It looks very like the Ditch wheat, but our correspondent does not mention the variety, or the number of pounds to the bushel. On the whole, the sample gives a very encouraging idea of the wheat-growing capabilities of our sister colony at the far north-west.

Large Mangolds.

(To the Editor of the CANADA FARMER.)

SIR:—Mr John Drew, of this place, has raised on his farm, this season, six Mangold Wurtzels, weighing together one hundred and fifty pounds and a half (150½), one of them weighing alone over thirty four pounds. These beat the gentleman who exhibited at Exeter Fall Show. If you can spare space in the FARMER, please insert this, and oblige.

Yours truly,

GEORGE DUNCAN.

Clifton, Ontario.

Hen Manure.

(To the Editor of the CANADA FARMER.)

SIR:—In your last issue, there is an article on "How to utilize hen manure." A friend of mine in England has, what many, with myself, might think a simpler and more efficacious plan, which is simply to gather some peaty soil in the summer, dry it thoroughly in the sun, and store it away in a dry place. With this, dust the hen house floor well two or three times a week, and once a week sweep it out clean and store in a dry place. You can thus prevent the manure from emitting any offensive smell, keep the hen house perfectly sweet, and have a very valuable manure. He does his stable in a similar manner, except that it is cleaned out daily, and sufficient is put down to absorb the urine, a very important item, usually not only lost, but allowed to become a nuisance to man and beast.

LE SPRING.

Brantford, Ont., Dec. 11, 1873.

THE CANADA FARMER

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TORONTO.

Agents wanted in every town and village in the Dominion to canvass for subscribers. Liberal commission allowed. Send for circular stating terms.

The Canada Farmer.

TORONTO, CANADA, DECEMBER 30, 1873.

The "Canada Farmer," for 1873.

With the present number, the issues of this journal for the current year are completed, and, of necessity, considerable space is occupied with title page, and index, to the exclusion of a part of the usual reading matter. The copious, and carefully prepared index will, however, be found of great service in readily turning to any subject which it is desired to examine, while the most cursory survey of its variety, and comprehensiveness of topics, will be sufficient to convince any one that the volume now closing contains a very large amount of useful information on rural matters, and is, indeed, a little family library in itself. We take a justifiable pride in reviewing the ground covered by the present volume, and are persuaded that all attentive readers of the CANADA FARMER will feel that they have been amply rewarded for their investment of subscription money. A NEW SERIES of this journal was commenced at the beginning of the year now closing, with the intention of dealing more elaborately and thoroughly with the great principles on which high farming is based. It was felt that the time had come for energetic effort to raise the standard of practical agriculture, so as to increase the profits to be derived from farm-work. To this end we have discussed soils, and their improvement; implements, and their uses; grasses, and forage crops; the soiling system; the preparation and application of manures. The various aspects and manipulations of dairy farming, have been treated by one of the ablest, practical dairymen on this continent. Horticulture, in its different phases, has been fully exhibited. The breeding and care of stock has received a large measure of attention. There have been scientific articles on agricultural chemistry. Veterinary matters, entomology, agricultural news, and editorials on various important subjects, have occupied a considerable amount of space. The poultry-yard has been a very full department, and bee-keeping has been explained and its progress duly chronicled. No subject of importance to the farming community has been overlooked. In view of the labors of the year, we confidently hope and believe that something has been done toward that con-

summation so greatly to be desired, when good farming shall be the rule, and had the exception, throughout "this Canada of ours."

The performance of this year, may be taken as programme and promise for the year to come. The same aims will be kept steadily in view, and equally strenuous efforts put forth to attain them. Substantially, the same able staff of writers will continue to enrich these columns with the productions of their minds and pens. We trust the public interest in this journal will increase; that those who derive benefit from a perusal of its pages, will endeavor to induce their neighbors to become subscribers also; and that thus the list of our patrons and readers will be greatly enlarged. And, in conclusion, we have to request that we may be favored with more communications from actual farmers, that our columns may be richer in the results of experience obtained in the various fields of practical husbandry.

The \$40,600 Cow Again.

After all, there is no such animal. Mr. Pavin Davies doesn't hold the "champion belt" among Short-horn men. England cannot boast possession of the costliest cow in the world. The wondrous animal remains, at depreciated value, in the United States. Fashionable Short-horn blood has gone down in the market twenty-five per cent.

The facts are briefly these: It was well known at the time of the great sale, that Mr. Pavin Davies' agent, Mr. Kello, had greatly exceeded his price limit, in bidding the enormous figure at which the 8th Duchess of Geneva was knocked down to him. Amid the mad whirl of excitement, he seems to have become completely mystified as to the relative value of dollars and pounds. A doubt was intimated very soon, both by cable despatches and the London papers, whether the purchase made under these circumstances, would be concluded. It now appears, that after Mr. Kello had returned to England, and fully reported the affair to Mr. Davies, that gentleman wrote Mr. Campbell, stating facts which would render it extremely inconvenient for him to consummate the purchase, and requesting him to sell the high-priced cow to the best advantage, on his account. The result has been that Col. Morris, of Fordham, N. Y., has become owner of the animal, at the same price as was paid by Lord Skelmersdale for the 1st Duchess of Oneda, viz.: \$30,600. Thus it would seem that Mr. Pavin Davies loses \$10,000 on the cow transaction, beside interest, and the expenses of his agent, who bought nothing for him except the cow, now re-sold.

We cannot but think that Mr. Davies has acted unwisely for his own interest. The purchase made in his behalf, though at a very high figure, was not so much higher than some other prices given at "the great sale of the century," as to preclude the hope of ultimate gain. It must not be forgotten, that this cow's last calf, only five months old, brought \$27,000 at the same sale. Moreover, the cow was in calf to a pure Duchess bull that sold for \$12,000. Suppose the 8th Duchess to have arrived safely in Gloucestershire, to do well with the calf she now carries, and to live and breed for several years to come; would she not have proved a little fortune to her owner? As the purest and most valuable Duchess cow in existence, not only would her progeny have brought the top prices in the Short horn market, but her presence in Mr. Davies' herd, would have stamped it with a character and prestige that would have attracted buyers from all parts of the world, and thus proved indirectly, as well as directly, profitable. Of course, there would have been a certain amount of risk in closing the purchase, but it is just such risk as is being constantly run in the mercantile world, and it is as true in the Short-horn ring as it is in the mart of commerce. "NOTHING VENTURE, NOTHING WIN."

National Short-horn Breeders' Association.

The second annual meeting of the above body was held at Cincinnati, Dec. 3rd. There was a fair attendance from Kentucky, Ohio and Indiana, with a scattering representation from the other States and Canada. The President, Dr. A. C. Stevenson, of Greencastle, Ind., read an opening address, which was largely occupied with matters of local interest, and alluded but incidentally to questions that might possibly arise for discussion. There were several essays on the programme, on as many topics connected with Short-horn breeding, but several of the essayists failed to appear. Dr. Sprague, of Iowa, read one on the "Conformation, contour and color of Short-horns," which seems to have been an able production, and elicited some discussion, especially on the subject of color. The general opinion seemed to be that a meretricious value was being attached to reds, and that, as a rule, roans were preferable, while very fine animals were often white. Some one objecting that whites were tender and did not winter well, a Kentucky breeder asked why the Almighty had placed white bears in the Polar regions, if white was not a hardy color. Prof. Miles, of the Michigan Agricultural College, read a paper on "In-breeding," showing that close breeding had been resorted to with good effect in some cases, and for a generation or two, particular characteristics being thus fixed, but arguing that the practice could not be carried far, or continued long, without deterioration. The matter was fully discussed, and general concurrence in the Professor's views was brought out.

A valuable paper was read by the President on "Breeding of Short-horns for beef and milk," to which we may perhaps advert more fully hereafter. The New York Mills sale was rather sharply criticised in a paper by Mr. A. S. Matthews, of West Virginia, which led to a sharp debate, and a motion to suppress the paper from the transactions of the association, and also from publicity through the press, which was carried, unfortunately, as we think, since the course taken seemed to betray fear of free speech and fair criticism. The old-time controversy about the Herd-book was renewed, Mr. Bedford, of Kentucky moving a resolution providing "that in recording animals in the American Herd-book, no animal should be admitted that does not trace its ancestry on both sides to imported Short-horns." After a long and hot debate, this resolution was carried by a vote of 34 to 23, many members having left for home before the vote was taken. In view of this, and of the transparent absurdity of 34 men out of the 1,000 or 1,200 Short-horn breeders on this continent assuming to pass such a rule, the matter was subsequently re-considered, and laid on the table. The Hon. D. Christie represented the breeders of the Dominion, and acted as delegate from the Provincial Board of Agriculture, at this meeting. The Association is to meet next year at Springfield, Ill.

Proceedings of the N. Y. State Dairymen's Association.

The winter meeting of this association was held at Sinclearville, Chautauqua Co. on the 10th and 11th instants. The occasion called together an unusually intelligent assemblage of farmers, that filled the largest hall the place could afford, in spite of mud, and almost constant rain, and a railroad accident besides. The wisdom of the executive board in holding its convention in a new locality was verified in the result of this meeting. It carried profitable discussion into a remote wing of the state, and called into activity a new class of minds that, once awakened, will push investigations further. It is to be hoped that similar associations will profit by this example. The session was opened by an address by President H. A. Wildard. Mr. W. took a hasty glance at the condition of the dairy interest of the State. Two months' drought

in the early part of the season, it was estimated, had out short the crop of the season "40,000 to 60,000 lbs. for every 700 to 800 cows," equal to a deficit of 50 or 60 lbs. per cow. This loss in yield of cheese is followed by an estimated defect of one-third in the winter's keep, the price of which is very high, while stock is very low—hay \$25 a ton at the barn, and good straight young cows \$15 per head. The exports from the U. S. for the year are put by Mr. W. at 5,000,000 lbs., which is from 20 to 25 millions more than any previous year. If these estimates are correct, the deficit in home consumption must be large. With this large and increasing exportation, with 500,000 cheese-eating emigrants added to our number annually, and with the rapid increase of our own population, the danger of over production was thought not to be imminent. To alleviate the misfortunes of drought and panic a reduction of farm wages to \$1½ per month for each cent per pound cheese sells for—cheese at 12½ cents, wages per month should be \$18; to guard more carefully against little wastes on the farm and in the family; to trust less to hired help; and weeding out unprofitable animals, to keep better stock, and care for it more kindly. Hon. Harris Lewis, of Frankfort, N. Y., spoke on "adaptation." He would have the young dairyman begin the work of adaptation, by selecting a companion suited to his vocation; a farm adapted to the business of dairying; stock suited to the special branch of the art he would pursue; the kind of food adapted to that branch, and the quantity of the herd, never pinching them an hour. He recommended grass as the proper food of cows in the summer, and dried grass for winter, especially so long as cows are in milk. He urged that for profit, for quality and quantity of milk, and health of stock, grass was better than grain. Hon. John Stanton Gould, of Hudson, delivered the annual address, subject—"cleanliness." Cleanliness had a wider significance than it was customary to give to that term. It excluded all substances found in milk not necessary to its composition. Milk is made up of certain materials in certain conditions and proportions, as water, butter, sugar, casein, and certain minerals—and all matter contained in milk foreign to these necessary constituents, no matter what it might be considered under other circumstances, must be regarded as filth when combined with milk. The otto of roses would be filth in a milk pail. It is not even necessary that something be added to make milk unclean. There is such a thing as native filth, that may grow into rank uncleanness. The milk collected at the condensing factories is of the highest order of purity, yet, while in the vacuum pan undergoing the process of condensation, it gives off a mingled odor, a cow's breath, and her stable, that is most offensive. Filth may, therefore, be cultivated. It may also be absorbed, as well as added by contact with unclean vessels, or by unclean handling. The cause of the native filth is a ferment, which exists alike in the milk of the wild and domestic cow. It is a fungus plant, only seen with the microscope. It grows like yeast, and in its growth gives off gases, and a strong smell, which dairy men call "animal odor." It is of the nature of rennet, and if milk is kept covered and warm it will soon thicken into curd without souring. It grows also by unnatural disturbances in the health of the cow, as by heating her blood.

The composition of butter, and the acids that form in it were minutely described, and also the peculiar changes that occur in cheese. The various modifications which occur in these highly complex bodies were attributed to the effect of cryptogamous plants, which, it was urged, was important for dairymen to study, as upon their peculiar development depends the perfection or destruction of all his goods. Though active in all his operations they are, as yet, little known to dairymen. They float by myriads in the scented air from the adjacent pen, the whey vat, the kitchen, and the cellar, and contaminate his butter, his cheese, his milk, but most of all his cream. The

speaker also impressed the propriety of a better understanding of all the laws connected with the production and the management of milk, and suggested the formation of a scientific commission to develop and expound them.

Acids have become an important item in the dairyman's art, and it is of much consequence that he should know the exact state of their development as the work goes on. To show the possibility of doing this, Mr. C. introduced one of Twitchell's acidometers, and performed experiments in the presence of the audience, to show how easily and certainly slight degrees of acidity could be determined.

The subject announced for Prof. E. J. Wickson, of the *Utah Herald* was "Feeding at a mark." The professor explained the nature of the changes that are constantly occurring in matter, how inorganic assumes to be organic, and becomes vegetable, how vegetable matter is converted into the substance of vegetable eaters, and the vegetable eaters themselves into animal eaters—the matter in each transformation becoming more highly organized and complex. The burden of the discourse was to shew how feeding for a special purpose could be accomplished. He proceeded to show, by illustrations on canvass, how the supporters of respiration, and also albumenoids are changed from one to another of the many forms which each of these classes of substances are often assuming, how starch, and woody fibre are changed into sugar, by giving off a trifle of one of their elements, and how sugar is in the same way converted into fat. In a similar manner, by increasing or diminishing certain elements, the flesh-forming materials, albumen, fibre, casein, &c., are changed from one to the other. In feeding for a special purpose, that food which requires the least change to convert it into the desired product is to be preferred. If fat is the object, it may be derived from starch or sugar, or fatty matter itself. Sugar may be changed into fat by the loss of a little oxygen, while starch must first be changed into sugar before it can become fat. The sugar, therefore, will better contribute to the formation of fat than starch, because the latter requires two changes to be thus converted. But fatty matter which exists in the vegetable already formed, can be appropriated by the animal without any change, and is to be preferred to either. The tendency to accumulate fat is stimulated by the ease with which it can be done. The tendency to form bone, muscle, or milk, can be cultivated in a similar manner by providing the animal with food that will be converted into the desired material with the least change. Thus, in forming milk, casein is ready formed in peas and beans, sugar in fruit and beasts, and the fat in oily seeds, corn, &c. The lecturer proceeded at some length to point out the way in which chemistry can be made available in assisting the dairyman to make up rations for his cows that would enlarge and prolong their yield of milk. The discourse was listened to with a deep interest.

L. B. Arnold, of the *CANADA FARMER*, occupied the stage after Prof. Wickson. Subject, "The influence of heat as used in cheese-making." All the changes in milk, that occur in the process of cheese-making, are induced by the agency of some variety of the cryptogamous plants, which have been referred to by Mr. Gould. The effect of heat, up to a certain degree, hastens the growth of these plants, and hurries up the changes their growth produces. The higher the degree of heat, compatible with their growth, the more rapid will be the coagulation of the milk, the separation of the whey, and the conversion of the curd into ripened cheese. But, in the manufacture of cheese, it is more important to carry on the changes *evenly than rapidly*. In the present mode of working, we often fall short of uniformity. The curd on the top of the vat, or vessel, in which the milk is coagulated, is apt to get cooler than that at the bottom and sides, which are protected from contact with the air. The curd thus cooled does not ripen

as rapidly as that which is kept warmer. It never catches up with the warmer curd; and when the latter has become ripened to the proper degree to go to press, the former will be too soft, and the contents of the cheese will not be uniform. It will contain hard and soft spots. In a recent journey that extended over a considerable portion of the State, frequent cases of this kind were met with, especially outside of the Mohawk valley. The rennet is usually applied to milk at 80 to 84 degrees, and by standing, falls from 4 to 6 degrees lower. The scalding is generally at 98, the whole mass being raised about 20 degrees. As heat is applied at the bottom and sides of the vat, it cannot be evenly applied while the curd is in one mass, so it is divided by cutting into pieces more or less minute. The larger the pieces the more unevenly will they heat. As the temperature rises, the outside of the lumps heat first, and the inside is all the time a little behind. This difference in "cooking," between the inside and outside of the lumps, affects the quality of the cheese unfavorably, and is a serious obstacle in the way of successful manufacture, especially on the plan known as "coarse curds." The finer the curd is divided, and the more thoroughly it is stirred to keep it fine, the more evenly will it heat, and the better will be the cheese, but the greater will be the waste. It is a very difficult matter, and one that can only be accomplished with long experience, and close observation, to regulate the fineness of cutting, and the method of stirring, so as to secure an even heating of the curd, and at the same time avoid loss.

To obviate these difficulties, it is suggested that vats be so constructed as to maintain their contents at a uniform temperature, that the rennet be applied to the milk at such a temperature as careful observation shall decide as best, and then let the ripening of the curd, without cutting, go on at one uniform degree till it is ready to grind and salt. This would greatly simplify the process of cheese manufacture, and bring it more within the range of prescribed rules, and make it less dependent on skill and experience.

This process was not presented as a perfect plan to which no objections could be made, but as a suggestion to be considered. The plan has been a favorite one with the speaker for several years, and some experiments have been made looking toward its adoption. It has occurred to others as well as the speaker, and cheese has been made to a limited extent on this plan that has proved to be good, and to yield at least 10 per cent. more product than the ordinary method. Under these circumstances, it was deemed appropriate, at a meeting composed chiefly of the most intelligent experts, to throw out the suggestion for criticism, and food for thought.

Hon. Josiah Shull, of Hon. discussed upon cross-breeding for the improvement of dairy stock. The common stock of the country, Mr. S. considered, were made up, not of any particular breed, but of a mixture of many breeds. They are generally called natives, but they are not natives. The only native cow is the buffalo. There is often good veins in the blood of common cattle that can be made useful by crossing with some good animal. The object of the dairymen is milk, and in crossing with other stock this must not be lost sight of, but other things should not be ignored. Beef is also an object with the dairyman, and to a certain extent, beef is not incompatible with milk. We should cross to increase size. The cow is a machine, and large machines work more economically than small ones, especially in our severe climate. Crossing with milking strains of the Short horns was recommended. It had proved successful in his experience. Mr. S. went into a minute calculation to show the difference in profit between common, and large milkers. The profit, however, was all with the large milkers. Constitution was a grand point to be regarded. Size, nor milking qualities were valuable without it. Large consumption is necessary to large results in milk or

beef, and cattle that are habitually liberal feeders should be selected. Crossing is more successfully done with a bull from a milky strain of Short-horns, or of the Ayrshires, if cheese, or marketing milk is designed; but if butter is intended, the Jersey's, or Alderney's should form at least a share of the stock.

Mr. H. Farrington, of Canada, with a large, and long experience, had found the so-called natives, the best cows for the dairy. The best herds he had ever owned, or seen, were of this sort of cattle. There are good and poor milkers in all breeds, but the chances for selecting good milkers are best with the common stock.

E. W. Stewart, of the *Live Stock Journal* spoke on "feeding for milk production." Mr. S. would not follow the example of feeding high to make rich manure. He would feed for paying results. The profit in feeding much cows comes from the amount consumed above what is necessary to support the body of the cow. He would make that amount as large as possible, and would have it adapted to their necessities by a proper admixture of nutritious elements. Extra rich manure is an indication of faulty proportions of the food. If there is a judicious combination of respiratory and flesh-building matter in the food, it will all be perfectly consumed and without loss. There will no excess of either left to enrich the manure. Fodder corn, and corn-meal contain the supporters of respiration in excess, and could not be fed alone without loss. They should always be fed with something rich in albumenoids, as pea meal, oil meal, clover hay, or bran. Clover hay, and corn meal make a well-balanced food. Oats form nearly a perfect food of themselves, and stimulate the flow of milk. The composition of his cattle food should always be studied by the farmer, and a balance of nutritive properties made by mixing. All that cows can possibly digest and assimilate, should be constantly supplied, but nothing more. Anything in excess of this will go to enrich the manure heap, at a heavy cost. A variety of foods gives better results than a single kind. Many grasses in a pasture are better than one, and the same is true in winter food. As the amount of profit is determined by the quantity of food eaten and digested, it is important that it should be fed in such a condition as to be easily and rapidly digested. Green food digests more readily, and more perfectly than dry, and is, therefore, preferred. The season of green food should be made as long as possible, extending it into, and through the winter with roots, and such other green food as can be preserved. Young food digests better than old, and produces better butter and cheese. Plants which are suffered to stand in the field or pasture till past the season for loss of succulence, are injured in regard to ease of digestion, and quality of product. Another circumstance which renders many kinds of cattle food more easily and perfectly digested, is cooking. This brings dry food back into something like its green and succulent state, and enables the cow to appropriate much that would otherwise be indigestible. Mr. S. related experiments in which he had proved that rations of 24 lbs. made up of hay and grain uncooked, produced no better results, when continued for three months, than a ration of 16 lbs. of the same materials when cooked, thus gaining by cooking 33 per cent of his raw food. The speaker dwelt at some length upon the importance of cooking dry, fibrous food, such as hay, straw, corn stalks, &c., and as he has had a somewhat extensive experience in cooking food for winter's use, his facts and observations were valuable. His whole discourse, of an hour's length or more, of which we have given but a mere sketch, was listened to with much interest and profit.

MOORE'S RURAL NEW-YORKER, as will be seen by reference to advertisement in this paper, not only "still lives," but purposes to furnish a better paper during the ensuing year than ever before. It has long held a high place as a combined Rural, Literary and Family Weekly, and we trust its future career will be one of great prosperity and usefulness.

Breeder and Grazier.

Newly Shorn Rams as Breeders.

We find in the last *Bulletin of the National Association of Woolen Manufacturers*, a summary of a recent "Treatise on the Australian Merino," by John Kyrie Graham, of Melbourne, in which the writer makes the statement that newly shorn rams are practically destitute of procreative power:

"Perhaps it may not be generally known that a newly shorn ram will not beget a lamb. From experience I know this to be a fact, although I can do no more than conjecture a cause; namely, that the constitutional vigor of the animal is diverted from the procreative faculty, and concentrated in the production of its natural and indispensable clothing. Certain it is that the wool never grows so rapidly as it does immediately after shearing. In the year 1833 we had a very bad season, consequently a poor lamb ensued.

"At shearing time, in December, I drafted off all the dry ewes (about 4,000), and had them shorn by themselves first. I then selected 100 of the best rams, young and vigorous, or 25 rams to each 1,000 ewes, had them shorn, and put them to the ewes. I kept them with the ewes for one month—five weeks being the period usually allowed in the Bathurst district—and out of the 4,000 ewes, only 165 lambs were dropped. Of course I was perfectly astonished, and made every possible inquiry upon the subject, but no one could afford me any information. Some three or four years after, whilst looking over a copy of the *Sydney Herald*, I observed a paragraph stating a case exactly similar to my own, which had occurred to (I think) a Mr. Campbell, in the Goulbom or Yass district. The paragraph stated that this gentleman had drafted his dry ewes, and shorn them, and afterwards shorn as many rams as were needed for them. He left them together the usual time, and after all, the ewes did not drop 5 per cent. of lambs. After this, and not without much cogitation, I began to suspect the cause, and determined to test the soundness of my conclusions. For this purpose I drafted, at shearing time, 100 dry ewes, and put to them four young vigorous rams. The dropping amounted to 9 lambs. Am I not justified in concluding that sheep newly shorn will not produce lambs?"

Cotswolds Crossed with Southdowns.

A goodly number of wool growers in this country are recommending now, a cross between Cotswold and Southdown sheep, both for wool and mutton. One writer upon this subject says that the Cotswold is not quite so hardy as the Southdown, and other coarse-wooled sheep, but the cross has all the good qualities of the dam, with the size of the sire. He thinks it pays to buy a thorough-bred Cotswold buck, for the purpose of raising lambs from common, coarse-wooled sheep, or Southdown grades. It might pay better, perhaps, to hire the use of the ram, and if there were demand enough among our sheep breeders for this kind of service, it would be met by the Cotswold breeder, and farmers could have the annual lotting of bucks, as they have in England.

This cross has not been much attempted in this country, on account of the scarcity of Cotswold sheep. But, in England, it is very common, and is said to be one of the most profitable in the sheep raising districts. It is said by English farmers, who have a sharp eye to profits, that the produce of this cross—half-bred Down-Cotswolds—are probably sheep that come earlier to maturity, make more wool, and mutton, and, consequently, more money than any other sort the world over. They are not, however, sold generally as lambs, but as yearlings, twelve to fifteen months, worth from twenty, to twenty-three dollars a head. Of course, such sheep must have liberal feeding—about all the grass, turnips, and linseed cake, and meal, they can consume. This extra feeding pays in the increase of wool, and mutton, and in the superior quality of the manure dropped by the sheep.—*Ohio Farmer*

TREATMENT OF HORSES.—The New England Farmer contains the following:—A harness kept soft and pliable with good neat's foot oil, will last nearly a lifetime. It is stronger, because slightly elastic, and will seldom wear off the hair. Your horses' shoes will hold on longer if the clunches are not weakened by the file in finishing. Insist that the file does not touch the end of the nail where turned over. An over-reaching horse—one whose hind feet are frequently hitting the forward shoes—should wear heavy shoes forward, and light ones behind. The theory is that the heavier hoof will be thrown a little farther ahead at each step than the lighter one.

Another Short-horn Sale in Kentucky.

We learn from the *Country Gentleman* that the closing out Sale of the "Chesterfield" herd of Short Horns, belonging to Mr. James H. Davis, of Boyle Co., Ky., took place at Lexington on the 8th inst. Nearly all of the principal breeders of the Blue Grass region were present, and a number from other States. The stock was in good condition, the bidding spirited, and prices very satisfactory. I give you the result below:

COWS AND HEIFERS.	
Oxford Princess, white, 3 years, W. T. Withers, Lexington, Ky.	\$710
4th Mazurka of Chesterfield, red and white, 1 year, Walter Handy, Jessamine Co., Ky.	1,500
Minnie Booth, red, 3 years, H. P. McGrath, Lexington, Ky.	500
Minnie Oxford, red, 7 mos., T. C. Coleman, Mercer Co., Ky.	700
Rosalind 3d, roan, 1 year, Dr. Noel, Nashville, Tenn.	500
Victoria of Chesterfield, 1 year, roan, Thomas Cowan & Son, Boyd Station, Ky.	750
2d Peri of Chesterfield, red and white, 3 years, Walter Handy	600
3d Peri of Chesterfield, red and white, 2 years, W. T. Withers	510
1th Peri of Chesterfield, red and white, 3 months, Thomas Bryan, Fayette Co., Ky.	370
Maggie Bates, roan, 2 years, W. E. Simms, Paris, Ky.	610
Lucy Conklin 2nd, red and white, 1 year, M. W.razier, Cynthiana, Ky.	1-0
BULLS.	
Fidget's Oxfon, 5th, 11953, red and white, 2 years, Dr. Noel	4-0
2d Earl of Chesterfield, red and white, 7 months, Dr. Noel	120
BY QUANTITY.	
11 Cows and heifers average, \$72.72—total	\$790
2 bulls	60
13 head, average, \$63.07	819

Pork Packing in Chicago.

We see it stated that this business has opened with unusual activity, and it is expected that Chicago will this season nearly, if not quite equal St. Louis and Cincinnati together, in the number of hogs prepared for market. During the last three months twice as many hogs have been received there as during the same period in 1871, and one-third more than in 1872. During the week ending Nov. 15th, there was an increase of 40 per cent. as compared with the same week last year; during that ending Nov. 22nd, the increase was over 100 per cent. A correspondent of the *New York Times* states the number of hogs that reached Chicago in 1872, as 3,455,528, and estimates that of 1873 at about 1,000,000. The demand, he says, is good, and "prices generally much better for sellers than have heretofore been reported."—*Country Gentleman*.

GIVE SHEEP BETTER CARE.—Some farmers claim that there is no profit in keeping sheep of any breed. This is very true, under the rough system that is practised to a great extent by many owners—they are better without them. But to the farmer who will provide good quarters, and good and sufficient food, they will afford both profit and pleasure. There is, perhaps no point in which flock masters more frequently err in the management of their sheep, than allowing them to depend entirely upon pasture for subsistence during the latter part of fall and early winter. Circumstances the weather included must be extraordinarily favorable, if sheep, dependent solely upon grass at this season of the year, do not lose flesh. The growth of the grass being checked, the pasture usually becomes short. The frost not only diminishes the nutritive qualities of the grass, but prevents the sheep from grazing for some time in the morning.

THE FOOT OF A HORSE.—The human hand has often been taken to illustrate divine wisdom, and very well. But have you ever examined your horse's hoof? It is hardly less curious in its way. Its parts are somewhat complicated, yet their design is simple and obvious. The hoof is not, as it appears to the careless eye, a mere hump of insensible bone fastened to the leg by a joint. It is made up of a series of thin layers, or leaves of horn, about 500 in number, and nicely fitted to each other and forming a lining to the foot itself. Then there are as many more layers belonging to what is called the "cotton-bone," and fitted into this. These are elastic. Take a quire of paper and insert the leaves, one by one, into those of another quire, and you can get some idea of the arrangement of the several layers. Now, the weight of the horse rests on as many elastic springs as there are layers in his four feet about 4,000; and all this contrived, not only for the conveyance of his own body, but whatever burden may be laid on him.—*Rural Home*.

Entomological Department.

To Exterminate Ants.

The N. Y. *World* tells how housekeepers can rid themselves of red, and black ants. It says that one succeeded by filling cups with water, and placing them under the sink and cupboard, removing all crumbs, and everything they could eat, from the shelves. They all left. Another way is to wash the places they haunt with strong alum-water, and leave it standing in a vessel thereabouts. Another mode is to place a fresh meat bone where the ants can get at it, and they flock to it in large numbers. When they are on it, dip in hot water, repeat a few times, and the ants will have disappeared. Another remedy is to boil four ounces of quassia in a gallon of water, for ten minutes, and add four ounces of soap. This poured on their nests will destroy them. This is intended to destroy a nest of black ants, when it is found. For red ants, another remedy that has proved successful is: Take six or seven drops of oxalic acid, and mix it with a small teacupful of melted lard, and set this preparation wherever the ants are troublesome, and they will disappear in a short space of time. Carbolic acid, applied with a swab of raw cotton, on a thin stick, to the edge of the shelves, and where they seem to come from, will cause them to disappear, but before it is applied, all butter, and milk, should be removed from the vicinity, for both will absorb the odor emitted therefrom, which will give place thereto. But ants will not haunt the vicinity of carbolic acid, whether they are black, or red ants. Pulverized borax, sprinkled about the places infested by ants, is said to exterminate them. Another way adopted by some housekeepers, is to saturate a sponge with water, and sprinkle it with fine, powdered sugar. The ants will enter it, and may be immersed in boiling water, and thus destroyed. Wash the place infested with cresylic soap, or spirits of turpentine, and it is said they will avoid it.

A strong colony of bees have been known to build one hundred square inches of comb in twenty-four hours; at that rate over sixty sheets of comb a foot square could be constructed in three months. The editor of the *Annals of Bee Culture* has had a report of a swarm that built nine sheets of comb, ten by thirteen inches, in ten days.

CATCHING BEES.—Although bugs are generally found asleep at this time of year, it may be well to keep in mind the following method of destroying them, when the growing season comes again. If potato bugs could be trapped by a tar barrel, what a discovery that would be. A writer in a French horticultural journal relates this suggestive experience: "After sunset I place in the centre of my orchard an old barrel, the inside of which I have previously tarred. At the bottom of the barrel I place a lighted lamp. Insects of many kinds, attracted by the light, make for the lamp, and, while circling around it, strike against the sides of the barrel, where meeting with the tar, their wings and legs become so clogged that they fall helpless to the bottom. In the morning I examine the barrel and frequently take out of it ten or twelve gallons of cockchafer, which I at once destroy. A few pence worth of tar employed in this way will, without any further trouble, be the means of destroying innumerable numbers of these insects, whose larvae are among the most destructive pests the gardener or farmer has to contend against."

HOW DO PARASITIC INSECTS DETECT THEIR PREY?—A variety of opinions have been expressed as to the means by which ichneumon flies, and other parasitic insects discover the living objects upon which they seek to deposit their eggs. Some have inferred that this is done by sight, others by smell, or by the operation of some peculiar sense unknown to us. The rapid movements of some of the Hymenopterous parasites, which attack caterpillars, would rather lead one to suppose that the sense of touch is an agent, if not the sole agent. These flies may be noticed running rapidly up and down leaves and twigs, with vibrating antennae and palpi, sometimes going over very nearly the same ground again and again, which they would hardly do if they chiefly depended upon their eyes, and were any odor given forth which led them to their victims, these flies would hardly wander about in the manner we see. It is quite possible that they may detect even the larvae of Tortricids, by the feel of the leaf enclosing these, though the larvae themselves are screened. —J. R. S. C., in *Hardwicke's Science Gossip*.

Poultry Yard.

Brown Leghorns.

This new and beautiful variety of fowls has lately become very popular in the United States, and bids fair to out-rival some of the more widely known breeds. In size it is somewhat larger than the White Leghorn and hardier, and like the whites of the non-



sitting class. It is an abundant layer, of hardy constitution, capable of sustaining excellent health during the long and vigorous winters of our climate and is soon destined to become a general favorite to the farmer as well as the fancier.

Mr. F. J. Kinney, writing in *The Pet Stock, Pigeon and Poultry Bulletin* of May, 1873, says:—"I have bred Brown Leghorn fowls carefully for twenty years. My first I bought on board a ship in Boston Harbor, in the spring of 1853, which was the first trio I ever saw, and which I believe to have been the first ever brought to America. I have since had two other small lots direct from the city of Leghorn in Italy, and expect more soon from the same place. The first trio weighed 13½ lbs., and were yearlings. Their combs and wattles were very large and coarse; ear lobes entirely red, same as face, comb and wattles. They were not Black Red Games, nor Black Red Leghorns, but Brown Red, i. e., the cock's breast was dark brown, spotted with lighter brown, the dark brown running up under side of the neck; his hackle was light brown, striped with black, the hens were feathered and colored same as the good ones are now, the colors being very distinct and the pencilling the most beautiful of any fowl I ever saw, and the most distinct." A second importation by the same writer seems to have confirmed still more his opinion of the Brown Leghorns as a separate breed of fowl, they also having red ear-lobes; other importations by different breeders followed, all of which came from Leghorn or its vicinity and hence the name of the fowl. Considerable difference of opinion prevails as to the true color of the ear-lobe—some writers, Mr. Kenny among the number, state that the first importations all had red ear-lobes. Other writers are equally confident that there are several with white—be that as it may, it is now pretty well understood among fanciers that the deaf-ear-lobes should be white, and no doubt this will be the standard for exhibition. Much improvement in Brown Leghorns has been made since the first importations took place—and several writers in poultry journals have given their respective views of the breed—all speaking highly of them. We quote those of a well known fancier, Mr. W. E. Bonney:—"In Brown Leghorn fowls, their gay plumage, lively appearance, and, in fact, every feature connected with them is attractive and pleasing, and in this class we must soon recognize the leading variety, whether for fancy or profit.

They mature early; I have known pullets to commence laying at three months of age, and continue laying during the entire season. They are non-sitters; and I never saw a case of roup or any hereditary disease among my fowls during the whole period of my successful breeding. I have bred all classes of fowls, and by far give the Brown Leghorn the preference, I shall continue making a specialty of them, adding fresh imported blood when needed. I have bred them since 1860 (the first importation into this country being in 1852), and when I commenced to breed they would hatch all colors—black, brown, dominique, and in 1863 I had one white chicken (a pullet). Since then I have added fresh blood, sparing no pains to get select stock, and by careful breeding have accomplished their hatching true to color.

In the *Illustrated Book of Poultry* the author states that "the first Brown Leghorns ever received in England were sent to ourselves by the kindness of Mr. A. M. Halsted." "We might," the author adds, "describe the birds very briefly as combining the Spanish comb and type of head and body, with the color or plumage of black red game of a rather darkish type, the cock being a black breasted bird, with hackles orange red, striped with black, and the hen salmon-breasted, with the rest of the plumage partridge-marked, or brown finely pencilled over with dark markings. They are somewhat larger than white Leghorns, and rather shorter on the leg, averaging about half a pound heavier in the opinion of American breeders. Being anxious to test the stock, and having some suspicion the birds might have been created by crossing White Leghorns with Game, we hatched a brood of chicks on the 1st August. Except one or two broken, every egg hatched, and not a chick died. We know no fowls which feather so quickly, except Houdans and Andalusians. Being very short of room and accommodation, owing to a recent removal, the chicks had an open shed to roost in, but grew up perfectly hardy, and with no care whatever, in spite of the very late date of hatching. They were very uniform in color in their first feathers, but in their second or adult plumage two of the cockerels moulted black, all but some reddish feathers on the hackle and wings. The pullets varied little, two being just like the mother, and the rest of the same type, but darker, somewhat like darkish grey Dorkings. One cockerel was just like the father, and a fourth brown breasted. On the whole, and considering the want of what English fanciers consider careful breeding in nearly all American stock, we were surprised and gratified by the degree of uniformity thus apparent, and fully convinced that the breed was genuine, or a really distinct race." * * * our decided opinion is that in intrinsic value the Brown Leghorn is the best of all the American breeds, especially if size as well as number of eggs be taken into consideration. The constitution is hardy, the shape and carriage sprightly; the color neat, handsome, and at the same time adapted for wear; the flesh very good; the growth quick; and the eggs both large and numerous. The following is the American standard for Brown Leghorns as given in the work already quoted from.

Color of Cock.

Beak—yellow. Comb, face and wattle—Bright red. Ear-lobe—Pure opaque white. Head—rich reddish bay, shading into lighter tinge on the neck. Hackle—Rich golden red, each feather striped with black. Back, shoulder coverts and wing-bow—Very dark red, approaching black; on the lower part of the back each feather tipped or mooned with golden bay. Breast under part of body and thighs—Black. Wing coverts—Rich metallic black. Wing primaries—Black, each feather edged with brown. Wing secondaries—Black, with the outside web broadly edged with brown. Saddle—Rich reddish bay, each feather striped with black, the stripe being quite broad near the butt of the feather, and narrowing to the point.

Tail—Clear rich metallic black. *Tail coverts*—Black edged with brown. *Legs*—Yellow.

Color of Hen.

Head—Dark brown, the feathers slightly striped with black. *Neck*—yellowish brown, feathers minutely pencilled with black, leaving golden fringe-like margin of one-third the width of the web; the shaft of the feather white. *Comb, face and wattles*—bright red. *Beak*—yellow. *Ear-lobe*—opaque white. *Back and shoulder coverts*—brown, irregularly pencilled with black; the finer and more minute the markings the better. *Wing primaries*—Dull black, the outside web edged with brown. *Wing secondary*—inside web black, outside a rich brown, minutely and irregularly pencilled with black. *Tail*—black. *Tail coverts*—black, pencilled with brown. *Breast*—Salmon-brown, the shaft of each feather white, the color shading into lighter tint under the body. *Thighs*—Ashy brown, finely pencilled. *Legs*—yellow.

An Inexpensive Incubator.

Mrs. Smith writes as follows to the *Poultry Bulletin*: "The idea having suggested itself to me during the past spring, that the eggs of most domestic fowls might be hatched by some simple and inexpensive process of artificial incubation, I determined to make the experiment; and having succeeded, even beyond my own expectations, I have consented to send you a brief account of my method, which is not a patented affair, and which any one can easily understand and construct for himself, if so disposed. Before proceeding to give an account of my simple incubator, it may not be amiss to say that at one time I placed within it twenty eggs, and got therefrom eighty five chicks. At another time I deposited within it forty eggs and got thirty chicks; and at another, eighteen turkey eggs, which produced fourteen turkeys, the most of which are now thriving and doing well. Indeed, my incubator has produced for me a rather larger per centum of chicks than my hens have—but it required to be very regularly and carefully looked after and tended; for here, as in almost every other human pursuit, success is the reward of patient industry and watchfulness.

"Well, now for my simple contrivance: I took an old cane seat chair, from which the back was removed and made even with the seat. After removing the cane bottom, I took a large tin pan (such as housekeepers use for washing dishes), and passed it down into the seat of the chair. I then placed four round pebbles, about the size of a large walnut, on the bottom of the pan, and then upon these I placed a round tin pie pan, inverted, the pan being almost exactly the same size as the bottom of the large dish-pan, and resting steadily upon the little pebbles. Upon this inverted pie-plate I made a bed of a dozen or more thicknesses of old muslin sheeting, cut round to fit the pan, and laid smoothly upon the bottom. On this bed I placed the eggs for hatching, and among them I placed a thermometer. Over the top of the large pan I spread an old woollen blanket, several times folded. I then lighted a small kerosene lamp and placed it on the floor, immediately under the centre of the large pan. I next turned up the flame gradually until the mercury in the thermometer rose to 105°; and at this point I strove to keep the temperature for three weeks, and generally succeeded. But at one time, owing to a defective burner, the temperature rose to 120°, and destroyed vitality in almost all the eggs. At other times it fell as low as 90° and 95° degrees, but the eggs generally hatched at the accustomed season. This fluctuation in the heat generally occurred at night, and was attributable either to depression in the atmosphere, or irregularity of combustion in the lamps, which generated the heat for my incubator. My eggs were sprinkled occasionally from about the seventh day after being placed in the incubator till the period of hatching."

GENEROUS HEN.—Somebody says the hog is a Peabody amongst animals alongside of the hen. Throw a handful of corn into a ten-acre lot and every hen in the enclosure will get a dab at it. The last hen on the spot may not secure more than two kernels, but nothing in the hen's appearance will indicate that. It will step around with as much precision and gratitude as any in the flock, and wear the most pensive smile you ever saw. A hen will not eat everything it sees, but it will try to, and there isn't one of them on the face of the earth but that can tell you the taste of everything it has seen within the radius of half a mile of its home.

Miscellaneous.

Papering.

It is a matter of doubt why housekeepers, as a general rule, do most of the house papering in the spring, rather than in the fall of the year. There does not seem to be any good reason why such a course should be adopted. In the first place, rooms are newly papered to give them a more tidy appearance. In the spring there is enough out of doors to attract the eye; the windows are almost invariably open, and if one sits down in the house in preference to taking a seat on the lawn, or piazza, it is usually by the window, to get a view of the green fields, flowers, trees, or something outside of the house. The paper on the wall attracts little attention, and deserves little. In the fall and winter, everything outside is dreary, and bleak, and this should be made up by making the living rooms of the house as cozy and pleasant as possible. The paper that was put on in the spring has lost its attractions for the eye now, however much it may have been admired when it was first laid. It has become soiled in spots, and these untidy places are the first to catch the eye. If the paper had been put on in the fall, its brightness would have remained until spring, and in the summer it is not essential. Paper in a room adds a great deal to its comfort. It is a poor conductor of heat, and will more than pay its cost in the saving of fuel. The paste fills many of the cracks in the wall, through which the cold air of winter would drive, and prevents drafts, from which colds, and sore throats arise. In fall papering, we have no appearance of the mosquito corpses, slain by a sleepless victim in a fit of desperation, nor are we constantly reminded of those pests, the flies. The wall remains brightest and freshest when we most wish to see bright and fresh things. Now, a word about paper. Cheap paper is always the dearest. Those cheap kinds coming from fifteen to twenty-five cents per roll, are always a yard or two short, so that in reality nothing is gained in purchasing those poor grades; and a paper that is worth less than thirty-five, or forty cents hardly repays laying. If you wish to be frugal as possible, select a paper with a stripe, with "no match" to it, and in place of a border, take the remnants, cut in the stripe and mitre it at the top and bottom of the room. It gives a neat appearance, and looks like panel work. In this way your room is more ornamental—you save the border, and use up the waste pieces, that are of no value for anything else.

Now, about putting on the paper. The first essential, is a good paste, and the following rule for making that article is the best, and far the cheapest we have ever seen used:—Take eighteen pounds of bole, finely powdered, and softened in water. Then boil a pound and a quarter of glue, until it is thoroughly dissolved, and stir in the bole, with two pounds of gypsum. The whole mass is then to be forced through a sieve. This may then be diluted with water, to the consistency of a thin paste. It is not only better, and cheaper than ordinary flour paste, but will adhere to walls that have been whitewashed. Cut enough of paper the desired length to cover the entire room. Take boards the length of the paper, and place them upon stools the right height, to enable you to reach across the boards easily. Place the cut paper on these boards, face down, and with a soft brush apply the paste. When a strip has been pasted, fold the lower end over about one-third the way up, to prevent its sticking to the wall at the bottom. Take the strips by the two upper corners and place them against the wall. The paper will hang to the wall, but will not stick at the bottom, and you can sight down the inner edge, and see when you have it true with the casing, or last piece laid. Then fasten it at the top. For working it against the wall, don't use a cloth; take a whitewash brush, and carefully brush the paper to its place. These directions may be old to some of our readers, but it cost the writer a vast amount of trouble, and, possibly some scolding, before they were found out and put in practice. By following these directions, especially the one in regard to folding the lower end of the paper over, and letting it adhere to the body of the paper, one can do the otherwise unpleasant job of papering alone, and all help is superfluous. By using the brush in place of the cloth, air places will be avoided, and the paper will not be soiled by paste that sticks to a cloth.—*American Farm Journal*.

Home-Made Perfumery.

The ordinary method of obtaining the perfume of flowers, and one that has been employed for ages, is by distillation. Shakspeare tells us that

"—flowers distilled, though they with winter meet,
Lose but their show, their substance still lives sweet;"

or, in plain prose, that by distilling flowers we may possess their sweetness in winter, when their beauty has passed away.

The odor of flowers is due to a minute portion of volatile oil, which is continually generated and given off by the plant. When the flowers are distilled with water, the essential oil rises with the steam, and is condensed with it in the receiver. But the fragrant principle may be obtained in another way, which, as it requires no apparatus, may furnish an agreeable recreation to some of our readers who have flower gardens and plenty of leisure. The sweetness that would be otherwise wasted on the summer air, may be saved to delight the sense long after the blossoms that have exhales it have perished.

Gather the flowers, with as little of the stalk as possible, and put them in a jar three-quarters full of olive or almond oil. After they have soaked in the oil for twenty-four hours, the whole must be put into a coarse cloth bag, and the oil squeezed out; then fresh flowers are to be added, and the process repeated for twenty days or more, according to the strength of the perfume desired. When the odor of only one species is wanted, an immense number of the flowers are necessary to produce a scented oil, and special cultivation would be required to furnish them; but the amateur may use almost any sweet-scented flowers that come to hand, and get a mixed perfume, or *mille-bours* ("thousand flowers"), as the French call it. The smaller kinds are to be preferred for the purpose, such as sweet pea, muguet, stocks, clove pink, etc. The larger blossoms are not adapted for use by the novice, as the odor they impart does not compensate for the space they take up. The oil, when thoroughly perfumed, is to be mixed with an equal quantity of strong "deodorized" alcohol, and shaken every day for a fortnight; after which the spirit may be poured off quite clear and bright, and will be found highly charged with the odoriferous principle that was collected in the oil. Flowers that are going out of bloom are as good for this purpose as those in their prime, so that the garden need not be spoiled of its beauty for the experiment. To quote Shakspeare again:—

"Of their sweet deaths are sweetest odors made."

We presume that most persons would prefer to buy their perfumes rather than to manufacture them in this way; but some may enjoy the work for its own sake, and consider that the fragrant product is worth all the time and trouble it has cost.—*Journal of Chemistry*.

Sleeping in a Cold Room.

Hall's Journal of Health says that cold bed-chambers always imperil health, and invite fatal disease. Robust persons may safely sleep in a temperature of forty degrees, or under, but the old, the infant, and the frail, should never sleep in a room where the atmosphere is much under fifty degrees Fahrenheit.

All know the danger of going direct into the cold from a very warm room. Very few rooms, churches, theatres and the like are ever warmer than seventy degrees. If it is freezing out of doors it is thirty degrees—the difference being forty degrees more. Persons will be chilled by such a change in ten minutes, although they may be actively walking. But to lie still in bed, nothing to promote the circulation, and breathe for hours the atmosphere of forty, or even fifty degrees, when the lungs are always ninety-eight, is too great a change. Many persons wake up in the morning with inflammation of the lungs who went to bed well, and are surprised that this should be the case. The cause may often be found in sleeping in a room, the window of which has been foolishly hoisted for ventilation. The water-cure journals of the country have done an incalculable injury by the blind and indiscriminate advice of hoisting the window at night.

The rule should be everywhere during the part of the year when fires are kept burning, to avoid hoisting outside windows. It is safer, and better to leave the chamber-door open, as also the fireplace—then there is a draft up the chimney, while the room is not so likely to become cold. If there is some fire in the room all night, the window may be opened an inch. It is better to sleep in a bad air all night with a temperature over fifty, than in a pure air with a temperature under forty. The bad air may sicken you; but cannot kill you; the cold air can, and does kill very often.

Ants and the "Taint of the Hand."

In *Nature*, July 24, Mr. James D. Hagué, writing on the habits of ants, attributes their dislike to the place across which a finger has been drawn to "the taint of the hand."

Now, sir, I have frequently drawn a line with a piece of chalk across the track of ants, and observed in them the same symptoms of dislike as Mr. Hagué's ants showed to the finger-mark.

I have also drawn a small circle of chalk round one or more ants, who will seek a spot untouched by the chalk through which to make their escape; but should there be no such opening, they will presently cross the circle. If, however, this enclosure be made upon a perpendicular wall, &c., they will frequently drop to the ground rather than walk cross the line.

Now, as I have never observed this same dislike—exhibited by dropping—of the "taint" when ants have been running over my hands, and as the chalk-line has the same effect as the finger-mark, may it not be something else than the "taint of the hand" to which the ants object when their usual track is interfered with?—*G. E. E., Nature.*

A QUEER SPECIFIC FOR RHEUMATISM.—We see by foreign journals that one of the new notions in Belgium is the use of *Plectranthue fruticosus* for rheumatism. All that is required, it is said, is to grow the plant in the room occupied by the sufferer. The plant is known in England under the name of "nettle geranium," (probably because it is neither a nettle nor a geranium,) but we are unable to state whether rheumatism is unknown in the cottage where it is cultivated as a window-plant. If it really has the medicinal powers ascribed to it, which we greatly doubt, though we can give no conclusive reason for our unbelief, it is likely to become a household favorite everywhere.

A BED COMFORT.—I want to tell you about a bed comfort we sleep under—the prettiest, warmest thing I ever saw in my life. It was made of white cotton flannel, and knotted with blue Berlin wool of a delicate shade. The contrast between the soft, white plush flannel, and the fleecy tassels of the wool was exquisite. The under side of the comfort was first put in the frames, fleecy part down, five or six pounds of batting evenly laid on it, a thin covering spread over that, and the whole quilted, or knotted with white thread, to keep the cotton in place; then the upper covering has the blue tassels tied in. This has been made for several years, but was not in the least soiled; and with a simple blanket was ample covering, though there were three feet of snow on the ground, and the mercury was below twenty degrees. In summer, it is folded in a sheet, and laid carefully away.—*Hearth and Home.*

A NEW KIND OF WALL.—A wall, lately invented, is coming into use in England, the advantages claimed for which are the very important ones of the non-absorbence of moisture, non-conduction of heat, economy of space, a washable surface and withal cheapness. Over a framework of strong cross wires, of about one-eighth of an inch thick, there is woven, by a powerful pressure, fibrous matter, which is saturated with a solution that renders it fire proof. It is then subjected to a very powerful pressure. A coating of light Scott's cement is then put upon it for inside facing, and Portland cement for outside facing. By this means surfaces are made impermeable to moisture, smooth, and easily washed with water, thus saving the expense of repeated lime-washings. It is formed into slabs in iron frames, which are put together and closely and securely fastened with bolts. The slabs are from one and a half to four inches thick. They are found to serve as a superb panelling for dividing walls and partitions. Where the space is of importance, it has the advantage, perhaps, over concrete walling, in enabling a wall to be made of not more than one and a half or two inches of thickness, and yet its quality is said to greatly exceed sound.

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