FARMER'S ADVOCATE

AND HOME MAGAZINE

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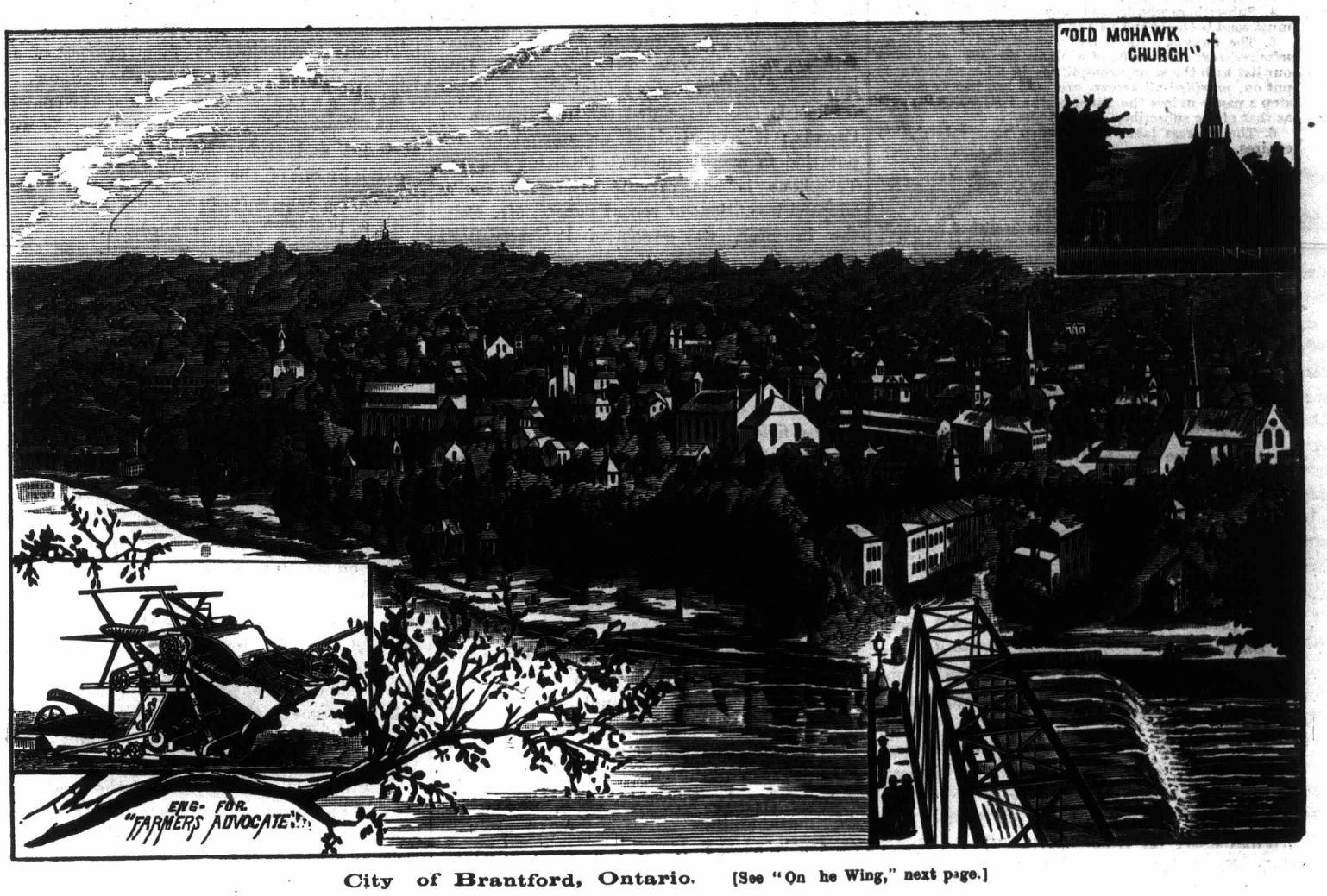

City of Brantford, Ontario. [See "On he Wing," next page.]

There is nothing more important to the farmer during the warm months than a judicious selection of beverages. In most articles of consumption the dearest is the cheapest in the long run; but with regard to summer drinks, the cheapest is often the best. It is quite possible for a beverage to be at once thirst-quenching, wholesome and nutritious. Water, if pure, should form the basis of such a mixture, and if it cannot be procured in a pure state, it can easily be purified by filtration through crushed vegetable charcoal. Many farmers think that ice is all the water needs to convert it into a summer drink; it is thought that ice will cure any offensiveness in the water. It may destroy its nauseous taste, but t encourages rather than suppresses the disease germs, making it more unwholesome than before, and ice-water is by no means a substantial thirst-quencher. Of all simple drinks available to the farmer, fresh whey is the most nutritious, wholesome and satisfying, but is not palatable enough for the tastes of many. It must not be drunk when sour. If the water of the farm is pure, either by nature or by filtration, a good drink may be made by soaking bran or oatmeal in it over night, when the salts will be dissolved out, making the drink nutritious as well as cooling. The addition of fruit juices to pure water will produce the same effect, and also act as a flavor. Any drink may be flavored by adding the juices of fruits. If kept in an earthenware jar and in a cool place, there will be no use for ice. When both meat and drink can be obtained so cheaply from the same liquid, there can be no excuse for not using it in the harvest field. If the water is not filtered it should be boiled in order to destroy any organic or other impure matter, and if used to soak bran or oatmeal, as already mentioned, it should first be heated and then allowed to cool, as it will then dissolve out more of the salts, making the beverage more cooling and nutritious.

Once you commence to build up a dairy herd, don't change it from cheese to butter, or from butter to cheese.

The measure of your success in farming is largely dependent upon the amount of judgment displayed during the coming two months.

THE FARMER'S ADVOCATE

—AND—

HOME MAGAZINE.

WILLIAM WELD, Editor and Proprietor.

The Leading Agricultural Journal Published in the Dominion.

The FARMER'S ADVOCATE is published on or about the 1st of each month. Is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for farmers, dairymen, gardeners or stockmen, of any publication in Canada.

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RENEW AT ONCE

Our Monthly Prize Essays.

Our prize of $5.00 for the best original essay on *Small Fruit Culture as an Occupation for Women*, has been awarded to Miss Jessie Robertson, Strabane, Ont. The essay appears in this issue.

A prize of $5.00 will be given for the best original essay on *Women in the Dairy.* Essays to be in not later than 15th July.

A prize of $5.00 will be given for the best original essay on *How Should Farmers Spend their Evenings?* Essays to be in not later than 15th August.

The diseased live-stock boomers in the U. S. are attempting to justify their business by assertions to the effect that the meat and dairy products of the diseased animals are not unfit for human consumption, and that those who think they are can easily cook the milk or meat thoroughly, thereby destroying the disease germs. The same authorities also point out the advisability of increasing the efficiency of the veterinary "squad" at the public expense, for the purpose of exterminating the diseases by artificial means, thereby giving dignity and stimulus to veterinary science. How would it do to remove the cause, thus saving millions of dollars for the people and giving dignity to their national reputation?

Editorial.

On the Wing.

Brantford is one of our cities of which we should all feel proud. It is questionable if we have any other city that can show as noble a record. ts name was given in honor of one of the native Indians who had done service to our country in settling peaceably any Indian troubles. In the foreground of the illustration on preceding page may be seen the new Lorne Bridge, which takes the place of the old wooden bridge erected on the site of the old Brant Ford, named after the old chief, Brant. A few of the buildings and factories may be seen in the foreground, and a few of the spires of some of the churches in the flat plateau above the river may next be seen in the distance. On the rising ground overlooking the city may be seen glimpses of some of the public institutions, the Blind Asylum, Stratford Hospital, Presbyterian College, private residences, etc. One small view can only give a faint idea of Brantford. It may be called the Birmingham of Canada; it has attained an unequalled reputation in many respects. Probably the Bell Telephone is one of the most universally adopted inventions of recent date. Mr. Bell, the inventor, was a son of Professor Bell, who lived two and a half miles from Brantford, and the first telephone ever erected was between the City of Brantford and Mr. Bell's father's farm.

It is the large manufacturing interests that tended to the rapid growth of this city, one of which is probably more talked about in our harvest fields than any others, that of Harris, Son & Co. This firm has supplied the farmers of this Dominion with more reapers and binders than any other. No expense has been spared to procure the best inventors, patterns, models and material. They consider that the highest perfection is reached in their Little Brantford, the name given to the harvester shown in the illustration, and it is indeed really wonderful to see to what perfection these harvesters are brought. We have seen one of them take off as rough and tangled a crop as it is possible to have, and yet it took it off cleaner than we would have done with the cradle. We have not seen all the harvesters at work that are made in Canada, but we have never yet seen any machine take off such tangled grain so efficiently as the Little Brantford, although there may be others that can do it as well. Their circulars show the highest testimonials from the Maritime Provinces to South America, embracing the highest certificates of approval from the farm of the Minister of Agriculture in Quebec, the Model Farm in Ontario, and the largest wheat farms in our North-west Territories, and this year an order for fifty has been received, notwithstanding tariffs and duties, to be used in South America, thus showing that they favorably compete with the American manufacturers.

The Waterous Engine Works, established some 36 years ago by Mr. Waterous, has become a household word in our Dominion, and has given Canada a reputation in foreign countries for goods in their line which must tend to our honor. Their portable engines and saw mills, and their pioneer grist mills, have excelled those constructed in Europe or any other part of the world, and the efficient working of their machinery in that line has caused such a demand for their goods in and out of Canada, that while most factories have been running on short time, they have been running full time, enlarging and increasing their business.

J. O. Wisner, Son & Co. make large numbers of seed drills; Cockshutt & Co. turn out large numbers of plows. Tisdale & Son are celebrated for their stable furniture. Stove and refrigerator factories, cotton and woolen mills, and lots of other factories and industries too numerous to mention are prospering here. The best apiary utensils and best information regarding the management of bees are furnished here.

We also find located here the celebrated Bow Park Herd, which has brought into Canada the highest honors attainable in the United States, namely, the sweepstakes prize for the best animal exhibited at their greatest of al stock exhibits, the Chicago Fat Stock Show.

There is a Ladies' College under the control of the Presbyterian denomination that is wel attended and giving great satisfaction. In passing by one of the public schools we saw a beautifully kept lawn, neat flower beds covered with a profusion of blossom, nice shade trees and ornamental shrubs, with vines and trees covering the rear premises, and the children walking about in the front or playing in the shaded play grounds in the rear. This is education, and what is done in Brantford can be accomplished in any school section in Canada on a smaller scale, and by right-minded trustees and teachers.

In the upper corner of our illustration you see the old Mohawk Church; it is the first church of any Christian denomination ever erected in Ontario. This church stands about one and a half miles from the bridge on the Indian reserve. In it is used on high occasions a silver communion service set that was presented to the Indians by Queen Anne in 1712; also a Bible that was presented to them by her at the same time. Whether the effects of these presents have had a beneficial influence on the Indians or on the inhabitants of Brant and Brantford, we must leave you to decide.

Brantford is probably one of the most substantial and prosperous cities in this Dominion, and her prosperity has been caused by being located in a good agricultural district, and the energy, honesty and activity of her manufacturers. Let us hope that Brant may prosper, and that much good may yet result from the Indian educational establishment here, which is considered to be the best on this continent.

Advices from Europe report that the present wheat acreage of the United Kingdom is ten per cent., and perhaps fifteen per cent., below last year's, and a deficiency may be expected of 8,000,000 bushels. It is estimated that the wheat acreage of Germany, Holland and Belgium will be short this year 12,000,000 bushels; that of Austria, Hungary, South Russia and Spain, 12,000,000 bushels, and that of France 22,000,000 bushels.

Enclosed please find one year's subscription to your paper, which I consider the best farmer's paper in the Dominion.

C. RICE.

Bear River, Digby Co., N. S.

Farmers' Clubs.

Our $100 Offer—Organization of a Farmers' Club.

It will be remembered that we recently offered a prize for the best essay on *How can the* FARMER'S ADVOCATE *best expend $100 annually in the Farmer's Interest?* The essays we received were numerous and the competition was keen. Many of the essayists were in favor of spending the money in prize essays to be published in the ADVOCATE. We did not feel disposed to change this department of our journal; for all our writers are the best and most practical that we can procure in their respective departments, while we have no means of ascertaining the practical efficiency of our essayists—except so far as indicated by their writings. Other essayists advised us to spend the money in increasing the circulation of the ADVOCATE. We feared that this might advance our own interests as much as those of the farmers. None of the recommendations mentioned would be a means of reaching any farmers beyond the circle of our readers, while our main object was that those who did not receive the advantages of an agricultural education should derive as much benefit as possible.

We considered that the hundred dollars which we have been annually expending for prizes at the Provincial Exhibition did not benefit our agricultural interests as much as it should. We were willing to continue the expenditure of this sum providing a plan could be devised for devoting it to the true interests of the farmers.

We thought of attempting the organization of a farmers' club, composed of a number of independent and influential farmers, who should have power to administer this fund in such a manner as they should from time to time deem expedient. We were encouraged in this view by several influential farmers who had taken an active interest in agricultural affairs; but we regarded it as no easy task to secure the co-operation of men who enjoyed the confidence and respect of the farming community.

Resolved, however, to yield to no discouragements, we asked the Middlesex County Council to appoint a committee composed of three of the most active, independent, and respected members of their body, with whom we might consult in certain matters pertaining to the farmers' welfare. They kindly did so, and Messrs. Leitch, Boston and Gilmour were the men who composed that committee. For a similar purpose we attended a meeting of the officers of the East Middlesex Agricultural Society, who also kindly appointed a committee composed of Messrs. Anderson, Johnston and Kennedy. At a meeting of these committees, Mr. D. Leitch was appointed chairman of the former, and Mr. Henry Anderson of the latter. We requested these two gentlemen to nominate a third party, some farmer in their municipality who possessed the confidence and respect of his fellow farmers, and who was noted for the interest he took in agricultural and municipal matters. The gentleman so appointed was Mr. J. Kennedy.

Shortly afterwards we called a meeting of these three gentlemen in our office, and consulted them as to the advisability of organizing a farmers' club. They unanimously assented to our proposals, but requested that the FARMER'S ADVOCATE should co-operate with them in the carrying out of their objects. This we agreed to do, but desired that the controlling influence should reside in the hands of the farmers.

At a subsequent meeting held recently in our office, after the committeemen had given the question mature consideration, officers were elected, the club was named, several members were elected, and some other preliminary business was transacted. Mr. Leitch was elected President, Mr. Weld, Vice-President; Mr. Anderson, Secretary, and Mr. Kennedy, Treasurer. After considerable discussion the club was named The Middlesex Agricultural Council. Mr. W. A. Macdonald was instructed to draft constitution and by-laws for discussion at the next meeting. It was agreed that the meetings should be held monthly, on the third Saturday of each month. Mr. Weld handed a cheque of $100 to the Treasurer. The manner in which the money will be expended will be found from time to time by reading the discussions of the club, which will be reported in the ADVOCATE.

We have great confidence in these gentlemen who have organized this club, knowing them personally to be men of honor and integrity. They have held the most honorable and responsible positions in the agricultural and municipal gift of this county for a number of years. They have always placed agricultural interests above jobbery and partyism, and it is their intention to conduct the club on a strictly independent basis.

The ADVOCATE does not bind itself to support them in all their actions; it will be as independent of them as it is of all other organizations, although it will uphold them with its funds and its influence so long as it is convinced that they are acting solely for our agricultural interests. It may not always be in accord with their policy, but it will offer no factious obstruction, and will give them every reasonable opportunity of defending their actions in its columns.

We have already taken objection to the name of the club, as we do not wish to create the impression that it is a mere local affair, confined to the county of Middlesex; but the majority held that a more expansive name would be too presumptuous.

Farmers of Canada, if we can show that we deserve your sympathy, we expect to receive it. We want your co-operation for your own good; we want to be criticised—severely, if we deserve it. Each one of you is heir to an equal share of all the benefits to be derived from this Council.

A great deal has been said and written within the past few years about large yields of milk from the various breeds of improved cattle, says the Journal of Agriculture. This week we saw a little scrub cow, yellow red, crumpled horns and as ugly as a *mud fence*, that is giving eight gallons of very rich milk per day, on grass supplemented by a few ears of corn per day. She is the property of the well known Merino sheep breeders, R. T. McCulley & Bro., Lee's Summit, Mo.

PRIZE ESSAY.

Small Fruit Culture as an Occupation for Women.

BY MISS JESSIE ROBERTSON, STRABANE, ONT.

If it can be demonstrated satisfactorily that the culture of small fruits is a fairly remunerative, moderately laborious, health-conducive occupation, there can then remain no further question as to its being a good occupation for women.

The sphere of industry allotted to women in general has been very circumscribed until a comparatively recent date, and in the majority of such occupations as were open to them the remuneration was so meagre that it was barely sufficient to provide the necessities of life. Young women desirous of making their own livelihood could only do so by going out to service (in many instances servitude would be a more truthful name), sewing or factory work. Of late years other avenues have been opened up, and to-day we find women copyists, telegraph operators, agents, clerks in shops of all kinds, etc. They have monopolized to a great extent the educational profession, and there are unmistakable indications in our own Dominion that medical and legal doors must soon admit them.

Notwithstanding these facts, however, there is still room for other employments. So many are the applicants for work in the various branches of feminine industry, that the remuneration allowed by employers is cut down to the lowest figures; with many it is but "working life out to keep life." In cities particularly is this the case. A woman who does her work equally as well as, sometimes better than, a man, receives usually about two-thirds, or less, of the remuneration. Tailoresses, dressmakers, machine and telegraph operators, copyists, clerks, etc., have long hours, and receive at first between two and three dollars per week. If industrious and competent they may reach four, five, six or seven—but rarely beyond the latter figure. These are not surmises, but facts obtained by inquiry from parties in such occupations.

Now the question suggests itself, Would not the culture of small fruits be more remunerative? In all cases where people work for their living the question of remuneration must be an important one. I think it can be answered without hesitation in the affirmative; observation proves that such is the case. If women can raise fine berries, luscious and juicy, fine flavored currants—and there is no good reason why they can not—they will, without doubt, command the highest market price. Some might raise two objections against this question of remuneration: First, a danger of the market being over-stocked, thus not finding ready sale; and, secondly, that fruit culture affords employment only for a few months of the year. To the first I would reply that in seasonable articles of consumption there is little danger of the supply exceeding the demand, while the palate-pleasing, health-producing, labor-saving propertie of fruit render it a specially desirable article of diet. The confined limits of city lots prevent its cultivation; hence, we find good fruit (and honest vendors) ever in demand. If at any time fruit can not be disposed of when fresh, no loss need be sustained i

may easily be canned and sold advantageously in that form.

The second objection I think can also be gracefully dismissed; for if men can make the culture of small fruits profitable, and observation proves that they do, why should not women do the same? The fruit season is, of course, very short, but the vines must be carefully attended to that they may produce more abundantly the coming season, and why should not young plants be grown for sale, thereby increasing the profits? Besides, in the very objection itself may be discerned a virtue. Owing to the long hours of many employments, women are compelled to neglect their mental faculties, and frequently to pay others for what they could easily do themselves, if they had time, in the matter of clothing, etc. Time is money to the industrious, and leisure during the winter months could be profitably used, thus proving no drain on the profits arising from the work of summer months.

I make the second specification *moderately laborious*, because there are many women dependent upon their own exertions who are not sufficiently strong to bear a great strain on their constitution. I consider it a strong argument in favor of small fruit culture as an occupation for women that it does not require extreme physical labor. The ground once prepared, with vines and bushes set, the heaviest of the work is done. A day laborer could be employed to do this and other occasional heavy work, as manuring, digging, etc., at a comparatively small cost. Pruning, fighting the insect pests, marketing the fruit, seeking out customers, etc., require earnest attention—handcraft and head work rather than great strength. Protected by thick-soled shoes and a sensible sunshade, I see no reason why a woman could not do this work as efficiently as a man.

Lastly, I would inquire the effect of outdoor work upon the health. I believe it is not an over estimate when I say that at least three-fourths of the women who are confined for many hours in close rooms, inhaling tainted air, in summer oppressed with extreme heat, and in winter shivering with intense cold, have not even a moderate degree of health. The listless movements, the fretful face, and the sallow complexion, tell the horrible tale of dyspepsia, liver-complaint, lung disorders, and many other ills, the heritage of woman. Physicians recommend out-door exercises as a panacea for many of these woes, and out-door exercises I take to mean walking, driving, boating, lawn-tennis, etc. Now, if these are prescribed for one who is really ill, a moderate amount of out-door work cannot be other than beneficial to those already blessed with a degree of strength. Working in the open air, pure as God created it, bathed with the sunshine that re-invigorates all Nature in whose midst we dwell, drinking pleasure from the same fountain as the birds, and blessed with the divinely-gifted instinct which finds, as Shakespeare says, "Tongues in trees; books in the running brooks; sermons in stones, and good in everything," women would surely find, in a measure at least, garden culture conducive to health and good spirits; and, if to the recuperation of the physical and the mental we add the relining of the purse, it surely establishes the fact that small fruit culture is a profitable and enjoyable occupation for women.

The Dairy.

The Best Methods of Making Butter.

In reply to many inquirers with reference to the establishment of creameries, we answered that the question was one of vast magnitude and importance, which we could not satisfactorily answer in a single article; but we promised to furnish information from time to time through our columns. We described the principles and practice of butter-making in our April issue, which was a valuable guide to makers, both in family and co-operative dairies; but this article is more especially written for operators on a somewhat extensive scale.

WHO ARE OUR DAIRY AUTHORITIES?

In agricultural questions there is one thing noticeable, viz., no factious schools exist, as is the case in other professions, and this unanimity is more especially marked in the science and practice of cheese-making. With regard to butter-making, however, there is a splitting tendency. The Danes have long taken the lead both in the science and the art of butter-making, and the famous Danish investigator, Prof. Fjord, has been regarded as the leading authority. His experiments have been numerous, accurate, and exhaustive, and the reputation which Danish butter has in the world's markets is chiefly due to his instrumentality. The Swartz, or low cooling method, adopted in Denmark, is too well known to require explanation here, its chief advantages residing in the facts that a larger percentage of butter can be obtained in a shorter space of time than by the ordinary shallow setting method at 50 or 60 degrees Fahr. It was therefore quite natural that other countries should adopt the Danish system.

Within the last few years, however, a set of American experimenters have pushed their way to the front. It is remarkable that these authorities seem to take no cognizance of Danish methods, although American investigators do not hesitate to acknowledge the Germans as their anteriors and superiors in other departments of agricultural investigation. In the same manner the authorities in Canada repudiate the researches of the American experimenters. The ADVOCATE, however, has no prejudices; it draws its information from the most reliable authorities, not condescending to stoop to the trifles of nationality or spheres of operation. While still conceding Prof. Fjord to be the leading authority in the range of butter-making as a whole, both with regard to his ability and experience, yet there are some points in the American investigations which are of so great practical importance that they cannot be overlooked by any impartial writer.

Let us take Prof. Arnold's late experiments in the ripening of cream. He set milk for 48 hours in oxygen gas at 63°, and set another sample of the same milk in carbonic acid gas. The cream of both soured alike, but that obtained from the setting in oxygen gas churned in two-thirds of the time required by the other; the butter was more highly flavored, more delicious, and kept longer than that obtained from the cream enveloped in carbonic acid. This proves that there is a material difference between ripening and souring. Now if cream is kept stirred for a while before churning, so as to receive the influence of atmospheric oxygen, it will soon *ripen*; but if kept in the ordinary way it will *sour*; that is, carbonic acid gas will develop, and a decomposing of the elements of the cream will take place, producing a bitterness which is relished by the peculiar tastes of some people; but this is a very unnatural condition. The beneficial changes which should take place are produced by oxygen and not by carbonic or other acids; and it is well known that oxygen gas will but feebly effect these changes at a low temperature—about 60° being the preferable quantity of heat. It may still be asserted that the cream may be raised in ice water at a temperature of 33° or 34°, and ripened afterwards; but there are serious objections to this method. In the first place, any sudden or extreme changes in the temperature of the milk, cream or butter must act injuriously to the fat globules, the caseinous sacs not being so susceptible of sudden change as the oils and fats which they contain, and are therefore liable to burst, producing a greasy, white, flavorless and short-lived quality of butter. Secondly, all the processes of butter-making should be carried on as rapidly as possible, otherwise the butter rapidly deteriorates in quality. Butter composed of large fat-globules, such as those of the Jersey and the Shorthorn, are specially susceptible of these changes. These investigations have been substantiated by Mr. J. N. Muncy, at the Iowa Agricultural College, and other experimenters. Unless these conclusions are proved to be erroneous by future investigations, the Danish system of butter-making will be revolutionized. Granting that 10 or 12 per cent. more butter can be obtained by setting in ice, this fact, considering also the inferior quality of the skim-milk for raising stock or other purposes, will not compensate the farmer for the expense of securing ice for the dairy. With regard to the keeping qualities of butter made under the different systems, the most exhaustive experiments have recently been published in the *Milch Zeitung*, a dairy paper published in Germany, which we regard to be the best dairy authority in the world. It was found that the butter from the centrifugal separator retained its fine qualities longer than that made by any other system, which proves the accuracy of Prof. Arnold's experiments. He estimates that cream produced by the centrifugal separator produces more flavor in a minute than it will do in a whole day by being placed in ice water excluded from the air. This effect is produced by the enormous amount of airing caused by the rapid revolution of the machine. Another cause of the inferior quality of butter made on the souring system is that the acidity is not evenly distributed throughout the whole mass, whereby one portion of the cream requires a different temperature and a different length of time in churning, the former ranging from 52° to 65°, while oxygen has a strong tendency to penetrate all parts of the cream uniformly.

WHAT IS THE BEST METHOD?

The conclusions drawn from what we have said prove the vast superiority of the system of separating the cream by centrifugal force; and the advantages are great both with reference to the quantity and the quality of the butter obtainable from the milk. Some tests have

shown centrifugal butter to be inferior to that made on the other systems; but the cream must be treated in a different way when a superior article is desirable.

FAMILY BUTTER-MAKING.

Before we present any arguments in support of what we consider to be the best system, let us consider a few of the leading objections against existing systems. Family butter-making must be entirely repudiated on account of its low price, its inferior quality, its lack of uniformity, and the uniform price paid by local dealers for all brands, good or bad, thereby placing a premium on inferior butter, general filthiness, and the absence of all desire to improve the dairy herds. On account of the scarcity of labor at reasonable wages, there must be a tendency to lighten household duties; and if the farmer's wife can obtain more money for her cream than for her butter, she cannot long be so blind to her own interest as to persist in existing methods. She will resist all attempts to become educated in advanced methods of butter-making so long as her pecuniary interests are not enhanced by a higher education; and if she is wise she will use her political influence against the election of all candidates who will persist in burdening her with taxes in support of such an educational system. Family butter-making must go, or its methods must be completely revolutionized.

CO-OPERATIVE BUTTER-MAKING.

The system of milk gathering is gradually yielding to that of cream gathering, so that we shall confine our observations to the latter. The co-operative is superior to the family method, inasmuch as a more uniform quality and a higher price can be obtained, although any farmer who undertakes to study and apply the best methods of butter-making, including the feeding and care of his stock, can make a quality much superior to that made on the co-operative plan. There is no known method of preventing the deterioration of the cream in its cartage to the factory; but there is a great saving in labor and utensils in a farming community manufacturing co-operatively, compared with doing so individually, and if the profits could be shared alike, causing no injustice to be done, great harmony and success would be the result. But the injustice is greater than in the family system of butter-making. In uniformity of price the two methods are identical, but as to the uniformity of quality there is no known plan of causing justice to be done. It was formerly supposed that 113 cubic inches of cream, the milk being set at about 60°, would produce a pound of butter. Let us quote a few figures to show what variations may occur. The following twenty numbers represent the number of cubic inches required to make a pound of butter, as ascertained by tests made at the Maine Experiment Station, the milk having been taken from as many different cows, and set at the same temperature, viz., deep setting in ice water: 124, 113, 79, 133, 84, 128, 104, 74, 108, 108, 136, 104, 99, 130, 116, 120, 92, 104, the average being 108. These figures are quite in sympathy with those of other tests, and they prove the gross injustice that occurs in dividing the profits on the cubic inch basis. What would the difference have been if the milk had been set at different temperatures, as is done in actual practice? From an educational standpoint it has also a pernicious effect, as it places a premium upon fraud and reckless management.

This system, however, has rapidly given way to the mode of testing by actual churning at different intervals, basing the payments upon the number of cubic inches required for a pound of butter as ascertained by the churn test. This is a cumbersome business, adding considerably to the cost of production, and has also been the cause of a great deal of dissatisfaction. The cream from the same cow may not produce the same percentage of butter on different days.

A great deal of discredit has been cast upon analysts because their methods of ascertaining the percentage of butter fats in the milk do not harmonize with the churn tests. But the question may be asked, is this the fault of the chemist or of the churn? The chemist can tell precisely the percentage of butter fats in the milk, but the churn cannot; for the quantity of water in butter varies from 8 to 18 per cent., and in addition to the butter fats, there may be appreciable quantities of casein, sugar, etc. How can the chemist foretell how much water and other extraneous stuff the churn is going to leave in the butter, or how much fat it will leave in the buttermilk? The better the quality of butter, the more water it contains; for such butter is composed of large globules, amongst which more water can find place than amongst small globules. The fewer the broken globules, also, the more water, other conditions being the same, so that a fair basis of quality is the percentage of water.

THE CENTRIFUGAL SYSTEM.

So far as the quantity and quality of butter is concerned, as well as the saving of labor, water, and sometimes ice, the saving of space, and the superior quality of the skim-milk, the cream separator has advantages not possessed by any of the other systems. Another great advantage possessed by the cream separator is that the loss sustained by the imperfect rising of the cream in heavy milk, as is the case in the pan system, is obviated. As the original outlay for plans is somewhat considerable, the system is not adapted to small dairies; the milk of not less than 20 or 25 cows should be employed. On the co-operative principle the centrifuge has some serious drawbacks. The milk must be taken to the factory, and although it is not asserted that the hauling of the milk is much more expensive than the hauling of the cream, yet the condition in which the skim-milk is returned is considerably impaired by unavoidable delays, and all the products depreciate by the tardiness of the system. The milk is in the best condition for separation of the cream just after it leaves the udder, so that every minute's delay thereafter, as well as all sudden or extreme changes of temperature, injuriously effect the quality and keeping properties of the butter. The cream of two or more milkings cannot be secured in a uniform condition, and all attempts to make it so by changes of temperature will be attended by unsatisfactory results.

All these facts point to the conclusion that if we are resolved upon acquiring the highest reputation for our butter in the world's markets, we must adopt the centrifugal system, not upon the co-operative principle, but by individual enterprise. There are many sections in the Dominion which are excellently well adapted to butter dairying. Let one or more enterprising farmers or dairymen in each of these sections, where pure, cool water abounds, where various grasses flourish, and where fresh breezes and shady resorts give health to and enliven the district, devote their energies to the undertaking for their own pleasure and profit, and for the reputation of the country. An ample commencement can be made on a hundred acre farm, even if the soil is materially worn out. The fertility can soon be restored, and the number of cows in the herd doubled. The raising of hogs or calves should be coupled with the enterprise, for the purpose of utilizing the surplus skim-milk, and making more manure to facilitate the raising of more cows. Let the cows be bred specially for butter-making. Such private enterprises will scarcely interfere in the least with the progress of cheese-making, for cheese factories may dot these districts almost as numerously as in others. The loss of a farm or two in the vicinity of a cheese factory will not materially effect our cheese business, while it will be millions of dollars to the country with regard to our butter industry, besides winning for us an imperishable name.

Centrifugal Dairying—Canadian-Danish Butter.

While in Hamilton a short time ago we called at the dairying establishment of Mr. W. G. Walton, one of our oldest and most experienced dairymen. He is also well read in dairy matters, and has a strong prejudice in favor of the Danish system. His mode of manufacture will be interesting to many of our readers. He purchases the milk from the surrounding farmers, paying 8 cts. per gallon, and the milk must stand a certain test as to percentage of cream.

He has two centrifugal cream separators, a DeLaval and a Burmeinster & Wain, operated by the same engine and in the same room, each having a capacity of 700 lbs. per hour, and costing $250 each. He raises the temperature of the milk to 80° before skimming, by means of a heater supplied with steam from the boiler. This heater is common to both separators. It is not much used in summer, as a mixture of the morning's milk with that of the previous evening makes about the desired temperature—80°. As soon as the cream comes from the separator the can which contains it is plunged into ice water, where it remains for 4 or 5 hours at a temperature of about 36°, until the cream is thoroughly chilled. It is then poured into a souring vat where it remains until the following morning at a temperature of about 60°. This vat is surrounded by a water-space in which water can be admitted at such a temperature as will keep the cream at about 60°, at which temperature the souring takes place. His theory is that the deleterious effects of any sudden or extreme change of temperature may be counteracted by a corresponding change in the opposite direction. How these changes effect the keeping qualities of the butter he has no personal experience, as his butter goes into immediate consumption. The cream is churned the following morning at 58° in summer and 60° in winter. He salts an ounce to the pound. He is not an advocate of heavy working of the butter.

He has sale for his skim and buttermilk in the city; but when returned to the farmers he recommends keeping the evening's milk separate from the morning's, so as to prevent souring before it reaches its destination. Mr. Walton's butter is regarded as a first-class article, or which he receives 30 to 35 cents per pound from special customers in Toronto.

From an educational standpoint, there is an important lesson to be drawn from Mr. Walton's experience. With his customers uniformity is of greater importance than quality. Even the coloring matter must not vary one shade in any day of the year; otherwise a suspicion is at once aroused as to the quality of the butter. He has educated his customers to a certain taste, and the call is therefore for uniformity. Let us now suppose Mr. Walton takes the advantage of later investigations, and resolves upon improving his brand. The result would be that he would lose custom. And so it goes with all other butter-makers who have special customers, although the mode of manufacture in each case may be quite different. Such consumers are not supposed to keep posted in the best methods of butter-making; their tastes cannot follow every step of improvement, and all attempts to elevate the tone of special butter-makers will prove as futile as the attempts made to educate the farmers in the science and art of butter-making.

How to Milk.

The first requisite to good milking is, that the cow be kept where her sides, teats and udder shall be clean and dry, says Prof. Arnold in N. Y. Tribune. The next requisite is, that she shall be where she shall be comfortable and free from any annoyance or excitement. This is essential to her "giving down" perfectly. A cow's bag is interspersed with delicate muscles so much under the control of her will that she can easily contract them and hold back a portion of her milk. There are but few cows which can long "hold back" the milk of a full udder, but it is very easy for them to hold back whenever there is but little in the bag, and at the last end of a milking; and this they are very sure to do if there is anything unusual to disturb or excite them, as loud talking, being milked by a stranger, or even his presence. I had my dairy of twenty cows fall short in their yield a pailful of milk several times one summer, simply from a neighbor's dog following into the milking barn when I was milking, my cows not being accustomed to the sight of a dog.

Assuming that the cow and her bag are clean and dry, and that she is comfortable and quiet, the milker should sit down gently on a firm stool, and with a light and careful motion brush teats, udder, and side of the cow next to him, to free them from any specks of dust, dirt or hairs that would be liable to fall into his pail. A tin pail, with the top wider than the bottom, is the best vessel to milk in. Let this be held firmly between the knees, with the bottom resting on the ankles, as this is the safest and best way to hold a pail to protect it against any sudden motion of the cow. If the bag is much pendent, and the cow is very gentle, there is no objection to setting the pail on the ground. Let the milker now grasp the teats with his whole hand, and by a firm and rapid but steady pressure crowd the milk out by closing the fingers next to the udder a little in advance of those below, being careful not to hurt the cow by pinching her teat between the ends of his fingers and his hand, or by pressing his finger nails into the teat as his hand is closed. Milk the left hind teat with the right forward one, and the right hind with the left forward, always holding the left wrist firmly so as to be ready instantly to crowd the cow's leg back if she should attempt to kick or step suddenly forward.

The milking should always be done with dry hands, both on account of cleanliness and for the sake of keeping the teats in good order. If the teats are too dry and inclined to crack, they may be wet after milking with a little of the strippings, or with a little linseed oil or other soft grease. The hands should press alternately and not both at once; and when milking is once begun, it should go on as rapidly as it can consistently with the comfort of the cow and the strength of the operator, and without any cessation until the milk is all drawn, otherwise the cow will get out of patience and hold back the last part of her milk.

The milk in the udder is contained in branching tubes and numerous small cavities distributed through it, the tubes coming together just at the upper end of the teat, and forming a single constricted channel, which is inclined to keep closed and nearly equivalent to a valve. Toward the close of the milking, a little pulling, as the teat is pressed, works the milk out of the little cavities by stretching and flattening them, and at the same time pulls open the constricted channel to let it pull through.

This pulling down must be gentle and moderate. As done by the calf in the sucking it is just right. If the teats are pulled too hard, the severe stretching of the walls of the passage at the upper end of the teat causes them to pull up and thicken, so much as to impede the flow into the teat and often to stop it entirely. For this reason the practice of stripping the milk out by pulling down with the thumb and fingers, and letting the teat slip between them as the milk is driven out, is not a good practice. It often causes the passage at the top of the teat to pull up and close, as just described, and to make the thickening of the walls apparent by a hard bunch which feels like a kernel of corn. The stripping method pulls too hard.

To get out the last drop of milk is an important means of keeping up and prolonging the flow. Nothing will dry up a cow faster than to leave a part of her milk in her bag at each milking. It will often aid in getting that important drop to clasp the lower part of the udder, or so much of it as can be taken in, and slide the hand down, gently pressing, so as to help crowd the milk forward till the hand come to the position for grasping the teat and pressing the milk out. All this should be done as expeditiously as possible, as the quicker the milk is got out the more perfectly it can be drawn.

It is not what a cow eats that tells, but what she assimilates, just as much so as a man's prosperity depends upon his margin of profits, not upon the quantity of money which he receives or expends.

Why Salt Shows on Butter.

It is not uncommon to see butter in rolls or prints of good quality and tolerably fresh, with a coating of salt crystals all over the outside, giving it a stale and unpleasant appearance. This may be caused in several ways. If the salt used is of poor quality, and particularly if it is too coarse in grain, it fails to be well incorporated in the butter, and, changing to brine after the rolls have been made up, it comes to the surface and takes the form of a crust. The finest and best salt, not well worked into the butter, will act in the same way. Again, if there is more moisture left in the butter than it will naturally hold, the salt joins with this extra water to form brine; this brine finds its way to the outside, evaporates and leaves the salt covering.

The best means, therefore, of avoiding this difficulty, is to make the butter by the granular method, wash it very thoroughly and allow it to drain and dry off well, while still in the granular form, before adding the salt. Then mix in the salt as thoroughly as possible, having it of the best quality and as fine as can be got; allow it to stand a little while before working and putting into its final form. This gives an opportunity for all the salt to dissolve before the working and then for removing all surplus brine.

All butter, however, contains a pretty large percentage of moisture in the form of brine, and it must be kept in a moist atmosphere or else the water of the brine will evaporate more or less, leaving the salt visible on the outside. Any good butter will show this dry salt if exposed long enough in very dry air.—[Henry E. Alvoid, Houghton Farm, N. Y.

The Aylesbury Dairy Company supplying dairy products in London take for analysis at least one sample each day from the milk of every dairyman farmer with whom it deals; 10,399 samples were analyzed in '84, specific gravity, total solids, and fat being determined in each one. Furthermore, 3,572 samples were taken from the milk carts of the company in the city. The difference between the milk brought from the country and that actually sold to families was insignificant. The average per cent. for the year of total solids in the milk was 12.96, and of fat 3.74. Of cream 600 samples were analyzed, giving an average of 42 per cent. of total solids, and 35.3 of fat. It is easy to see what an excellent system this is, on all sides; it encourages and secures the production of good milk by the dairymen, secures the certainty of the delivery of milk of the same good quality to the consumer at least as effectually as it can be done by any police inspection, and at the same time builds up a great business for the company by building up its reputation for uniformly square dealing.

The low prices realized at the sale of Sir Henry Allsopp's Shorthorns, in England, last week, serve to illustrate the general depression of agriculture in a striking manner. The total of the sale was about $45,000, which represented a very heavy loss on the original outlay. One cow, for instance, for which Sir Henry paid $16,000, only fetched $2,150, and the highest price of the day was $3,300.

Stock.

A Chatty Letter from the States.

[FROM OUR CHICAGO CORRESPONDENT.]

There is always some trouble in live stock circles over the adjustment of rates of freight charges. The chief trouble is now caused by the railroad pools compelling the dead meat shippers to pay a great deal more than those who ship live stock. The theory of pooling may be good enough; it certainly is from the standpoint of those whose money is invested in railway stock; but the practice of those combinations is surely very much against the interest of not only the middle men who slaughter and ship, but also the larger producing and consuming classes.

The object of these pooling institutions is to keep a lot of men employed to carefully watch the channels of the shipping trade, and wherever possible to add on extra charges for the benefit of the railroads, to be paid by the people. This fixing of charges has been reduced to one of the "exact" sciences by these expert fixers, while the charges have to be paid directly by the large slaughterers and shippers; they are all borne by the people, and thus by the pooling arrangement all competition is removed, and instead of having a dozen competing trunk lines, we have, virtually, one huge railway system which can almost make its own terms.

The old saying that "competition is the life of trade," will have to be revised, so far as the railroads are concerned, for they are of the opinion that their only chance to live and collect high rates all the time is not by competition, but by pooling their issues.

There has been a change in the system of the live stock pooling arrangements at Chicago. It used to be that the pool agent exerted absolute authority over all shippers in compelling them to go, not the way they might individually choose, but over the road which was behind in the common pool earnings. This resulted in a man's having absolutely nothing to say about the way he would ship his stock. He simply had so many cars to go to New York, for instance, and after he had turned them over to the pool commissioner at Chicago, he lost all control over them in every way until they were delivered to him in New York. This scheme was constantly making trouble for all hands. A man who wanted to ship over the Grand Trunk did not want to have his wishes entirely ignored, and have the cattle sent over the Lake Shore. A new scheme has been resorted to, and now instead of the pool commissioners diverting stock, to "even" the business they simply keep track of the business done by all of the roads, and if one road happens to haul more than its proportion of the stock, that road is compelled to refund in money to the roads that are "short" the amount. In orther words, a road gets its share of money whether it does its share of business or not.

Texas grass cattle are now moving to market very freely, and the prospects are that there will be a very large increase this year over last. Prices are about $5 to $7 per head lower than one year ago, and there are fears that a further reduction is imminent. The cattle marketed thus far have not been as good in quality as last year.

Reports from the range districts of British America are very flattering this year, and there will undoubtedly be large shipments of beef from the far northwest during the coming fall. It seems that ranchmen up there are learning better how to succeed in that country, and while they lost heavily during the first winter, which was not particularly severe, the Cochrane Ranch Company, for instance, has encountered very slight losses during the late unusually severe winter. It is said that the first winter's experience cost this company some $25,000, but the experience will probably be worth what it cost.

Some of the people interested in the development of the Canadian Northwest have a great deal of faith in its resources as a stock raising country, and a good many people predict that slaughtering and refrigerating establishments near these great growing regions are prospects of the not very remote future.

There is not a little talk about the Hudson Bay route for shipping to Europe. Practical men do not generally regard it as feasible, on account of the high latitude which would prevent navigation except during three or four months of the year. But it is claimed that even that would pay. The writer had a conversation not long since with a Winnipeg man who says that a refrigerator steamer has been running regularly from Hudson Bay to Europe for a number of years, and that if it pays on a small scale, it might on a larger one.

The slaughtering establishment of the Marquis DeMores, at Medora, D. T., is the most northerly of any such large enterprise at this time, but the success of that institution, it is said by enthusiasts, will revolutionize in a few years the shipping business from the northwest.

Shorthorn cattle are bringing good prices at the spring sales this year, but for some reason the Herefords continue to sell at a slight advance. Would it be so if there were equal numbers of these two rival breeds? Suppose there were as many Herefords in the land as there are Shorthorns, would not the relative prices then be a better test of the merits of the two breeds than now, when one is really common, and the other is almost a novelty?

What to do About Animal Disease.

What common sense suggests would be to put an honest, practical stockman in charge of the contagion business of the country, or of each State, and authorize him, by help of such skilled and trustworthy veterinary assistance as he might require, to get rid of infectious disease, and then hold him to strict account for the necessary expenditure, says a correspondent in the N. Y. Tribune. Instead of this, we have a hundred thousand dollars or so handed over each winter of late by Congress to the "Bureau of Animal Industry," Treasury Cattle Commissioner, etc., and thus far about what is there to show for it? Bulky volumes of "Annual Reports" contributed to the junk shops, and a succession of "outbreaks" of disease. Also, we continue to permit speculators to bring breeding cattle from Europe, the seed-bed of pleuro-pneumonia, rinderpest, etc. To what end? Not because the country needs these additions to its already fine and full representation of the best breeds of the world, but to enable the handful of importers to make money at cost of constant risk to all of our flocks and herds. Never a word say the veterinarians and Treasury Commissioners against this exposure; some critics have even accused them of desire to perpetuate the supply.

But here again practical men are opposed to the officials, and on the right ride. Several leading journals of agriculture have for months repeatedly protested against continued importations, and the same course of safety has been favored by public meetings. For example, at a recent important one in Western Missouri, a leading speaker lamented the "little use of 'stamping out' disease in when the State is wholly unprotected from a future introduction of it." "America," he went on to say, "receives all the dirt and filth of creation, together with the diseased cattle of the Old World, and Missouri is the especial dump-ground. It is getting about time to put up the bars. There are enough good cattle in this country without bringing any from across the water to scatter pleuro-pneumonia, and endanger our vast cattle interests." This is a fair statement of an important fact, calling for effective action at the earliest possible day. The thing to do about animal disease is to get straightforward business methods, and then refuse to seed for a further crop. Surely this would be better than to place confidence in the ever-increasing tangle of expensive veterinary tape.

Testing Cows for Butter.

Base, malignant insinuations against the ADVOCATE are frequently observed in our agricultural contemporaries because we have refused to uphold the various booms which are constantly assailing our agricultural interests. Amongst many other things we are accused of being behind the times for not making a practice of reporting those extraordinary butter yields which have been made by a few cows of good family. It is asserted that we are the champion of the "scrubs," even in face of our protestations that we will push forward any breed or kind which can be proved by facts, figures or arguments, to be the best for the special purpose for which it is required. Here is a specimen of the arguments of the boomers: Queen Jersey made forty pounds of butter in seven days; *therefore* the "scrub" must go. If honest investigation is to be burked, and free discussion stifled, it would be a grand thing for the speculaters; but, alas! for the farmers.

Let us examine the character of some of the tests which have been made with Jersey cows. It is claimed that these tests are purely practical, and should therefore win the confidence and respect of all practical farmers and dairymen. So far as we are concerned we care not whether the evidence comes from practice or science, so long as it leads to practical results. and so long as there is nothing misleading in the reports. The fact that practical investigators are bewildered at the results of these tests is one reason why they should be received with caution. We are pleased to see the energy displayed by the Jersey men, and we are convinced that they made a wise departure when they substituted actual performance for fancy points. Let us compare the results of a

few of these performances, as shown in the following table :—

Name of Cow.	Lbs. of Milk.	Lbs. of Butter.	Lbs. of Milk required for a pound of Butter.	Food consumed per day.
		lbs. oz.		
Mary Anne of St. Lambert.				
Test No. 1 (Sept. 1883)	251	27 9½	9.10	(14 lbs. oat meal, 14 lbs. pea meal, 7 lbs. oil meal, and pasture. Cost per day, 50 cents.
Test No. 2 (Sept. 1884)	245	36 12½	6.66	(25 lbs. oat meal, 17 lbs. pea meal, 6 lbs. oil meal, 2 lbs. bran, and pasture. Cost per day, 65 cents.
Princess				
Test No. 1 (1884).	315	27 10	.4	(35 lbs. clover hay, 48 lbs. bran, 12 lbs. oat meal, 6 lbs. corn meal, 6 lbs. linseed meal, and 35 carrots and beets. Costing $1.90 per day.
Test No. 2 (1885)	299¼	46 12½	6 4	(22 lbs. oat meal, 23 lbs. pea meal, 1 lb. bran, with hay, carrots and beets. Costing $1.00 per day.

In each case the test lasted seven days. The complete quantity of food consumed is only given in one instance, viz., the first test of Princess II., and the quantity and cost of food per day is only approximate in the other tests. If great feeding capacity is to be lauded, then these cows and these booms cannot receive too much praise. In the test just mentioned, the 27 pounds of butter would have to bring 34 cents per pound in order to pay for the bare cost of the food consumed. But we shall not dwell on these figures, for the reader can make his own deductions. Pedigree worshippers must feel astonished that there can be so much difference in the product of thoroughbred cows. If there is so much difference in the maximum yields, there must be an immense gulf between the maximum and the minimum. Now it is well known that these figures are presented to the public for the purpose of booming up the Jersey cattle, and the fancy prices are based upon these tests. Granting that there have been a few phenomenal records, this does not prove that there are no monstrosities in other breeds, possibly, also, including the "scrub" kind.

We shall now make a few demands from these men of record notoriety, leaving our readers to judge if our demands are just :

1. We want to know the exact quantity and quality of the food consumed, or the exact cost of producing a pound of butter. We are well aware that no two feeders will agree as to the nature of the ration to be fed during the test ; some will condemn foods which others applaud, proving that no satisfactory results can be obtained from this "practical" method of investigation. Nobody denies that the butter comes from the food as well as from the breed, which shows the necessity for a uniform method of feeding, If the feeding makes so much difference as it appears to do in the accompanying table of tests, then a Jersy herd can be manufactured out of any breed in a few months, and the less thoroughbred the cows are for this purpose the better.

2. We want to know if the cow increases or decreases in weight during the test. Some cows allow themselves to be milked almost to death for a short period of time, and then give out completely. They not only give milk for a short season, but also for a small number of seasons. Length of time in use is of greater importance in a cow than has been ascribed to it. The age of the cow, and the general system of management, are also matters of unquestionable importance.

3. We want to know something about the quality of the butter, its keeping qualities, the mode of manufacture. The quantity and quality of the food affects the churning very materially. It is well known that when succulent foods are fed, mostly all of the butter fats will be churned out of the milk (if churned whole), or the butter-milk; and it has been frequently observed that a greater weight of butter has been obtained than the weight of butter fats in the milk, while in dry food rations quite a large percentage of butter fats has been left in the skim-milk and the churn. We also want to know whether the cream has been raised on the ripening or souring principle, whether the milk has been set deep or shallow, and the temperature of the vessels, and the milk rooms. Inattention to this matter alone may make a difference of 12 to 15 per cent. in the butter yield. What are the keeping qualities of the butter? Is it really true that the quality is better than that of other breeds? It is known that the larger the fat globules the better the butter, which rather favors the Jersey brand; but otherwise, does not quality depend upon food and management? It is impossible that the best quality of butter can be obtained from phenomenal yields.

4. We want to know the quantity and value of the skim-milk. Butter is a pure luxury, all the nutritive value being in the skim-milk. This is a matter of great importance for those who want to raised much stock, and who have a worn out soil to be restored.

5. We want to know something about the health and constitution of the cow, and how she adapts herself to our climate and average system of management, as well as the impressive power of the breed upon our native herds.

6. We want to know the record of the whole herd, not a few individuals ; and if we can get this, then we want the minimum records of the breed as well as the maximum.

And yet an answer to these questions will only decide the true order of the records ; it will place many cows in the front rank which are now in the rear, and weed many out of the ranks altogether. It appears that the only object is to beat all previous records at any risk or expense. If these "practical" experts would honestly report to the farmer that the only practical lesson learned was the testing of the bursting pressure of these cows, they would at least receive credit for honesty. Even if these records could be turned to practical account, the farmer must still know similar records of all other competing breeds, including our natives, in order that he might be able to draw his own conclusions as to their respective merits. It is not the fault of the Jersey men that the champions of the other breeds do not push their business with equal zeal. A start must be made somewhere, no matter how false the principles may be, and so long as the Jersey men honestly seek to improve their methods according to the best light they can obtain, they will win our sympathy and support, and we will boom up every record that we regard to be of practical utility for all it is worth. If they have not the appliances for ascertaining the truth, let them hand their testing over to those who have.

Ensilage in England.

The Ensilage Commission appointed for the purpose of inquiring into the methods of preserving green fodder crops by the ensilage system, recently held a convention in London, England. The evidence of many practical farmers who have been practicing the system is reported at length in the English agricultural papers ; also the evidence of many noted agriculturists and other scientific authorities.

It appears that the promoters of the ensilage boom are manipulating the affair to their own advantage, at least as far as apparent consistency is concerned ; for the practical feeders who have been examined are unanimously in favor of the system, those who have abandoned the feeding of "pickled grass" in disgust not having been examined. Of course the evidence of such an eminent authority as Sir. J. B. Lawes, the most pronounced opponent of the system, could not have been consistently evaded. Agricultural journals and writers on both sides of the ocean have also committed themselves to the boom, and hence they appear averse to any evidence which is at variance with their policy. The Advocate is almost the only agricultural paper that has not been led astray by the crazy ; but we expressed our readiness to befriend the system so soon as reasonable arguments could be advanced in its favor, supported by the scrutiny of actual tests; for we foresaw many advantages that would arise if June grass could actually be fed during the winter months.

Importance of the Commission.

In one respect we regard this commission as one of the most important agricultural assemblages that has ever been held. It is a struggle between science and practice ; and, should the former prevail, a new era will be opened in the settlement of all agricultural questions. In short, it will form one of the most important precedents in agricultural history. The report of the commission will not be made public for some time, and it is yet premature to discuss the probable termination of the issue. The scientists still labor under a disadvantage inasmuch as the question has not yet been so thoroughly investigated as it might have been, while the practical men are the enthusiasts, and are very pronounced in their statements, although their evidences by no means harmonize. However, even should the report of the commissioners be averse to the practical investigators, the struggle between science and practice is only a question of time ; for the science includes the practice—that is, the principles, verified by accurately conducted tests, are arrayed against the loose experience of those whose figures are always round numbers, and whose opinions are usually swayed by prejudice or self-interest.

CLAIMS OF PRACTICAL FEEDERS.

We shall present a synopsis of the claims of the witnesses on both sides of the case in order that our readers may be their own judges. The advantages claimed by the practical authorities are as follows: 1.—Green fodders can be safely secured independent of the weather. 2.—More stock can be raised on the same area of land. 3.—Coarse vegetable matter can be utilized which would otherwise go to waste. 4.—Ensilage-fed cows give more milk and butter.

Now, before presenting the claims of the scientists, let us take a common-sense glance at these "advantages." Taking the average of seasons, if the weather is such that hay cannot be secured in a good condition, then it is quite possible that "pickled grass" may be as good as spoiled hay. Even if this view has force in any part of the continent of Europe, that is no reason why the boom should rage on this continent, where hay can be cured in average or good condition. The evidence as to the extra stock kept, varied from none extra to more than double the number. Let us suppose, for the sake of argument, that double the number can be kept, then this proves that half the nutriment of the hay is lost in the process of curing, providing no loss of nutriment occurs in the silo. The most casual observer must know that a loss of nutriment does take place in the silo. Every farmer who scents the escape of ammonia from his manure heap is aware that waste is taking place, and yet a whole neighborhood surrounding a silo is expected to snuff the escaping gases with the conviction that no waste is occurring. It has been asserted that coarse grasses, sedge, thistles, etc., which have little nutritive value, can be ensilaged and thus turned into profitable account. Why should these eminent practical authorities waste their valuable land by growing thistles and other noxious plants? If they become more nutritious in the silo, they must obtain their nutriment from the more nourishing grasses with which they are mixed. It may be true that cows fed on ensilage will give more milk than those fed on dry foods, but it is absurd to extol the silo on this account, for all succulent and stimulating foods produce this effect, and the authorities do not attempt to prove that "pickled grass" is cheaper or superior in this respect to other stimulating and succulent foods. Perhaps a small quantity of vinegar sprinkled over the dry food would be still cheaper and more efficacious. Why has the evidence of some of those milk companies who have repudiated "pickled milk," not been taken? It may also be true that more butter can be made, but this is also nothing to the credit of the ensilage, for all succulent foods produce milk which easily yields up its butter fats, both in setting and in churning, so that a change in the method of separation would produce the same results with dry foods. The duration of the milking period and the longevity of the cow, as well as the healthfulness of the milk, are injuriously affected by the use of ensilage or other stimulating foods.

PRACTICAL TESTS

One of the most exhaustive sets of practical experiments ever conducted in the feeding of ensilage was commenced by the late Dr. Vœlcker, chemist of the Royal Society of England, and the results have lately been made known. Eight bullocks were selected, four being fed on ensilage and four on roots and hay chaff. After sixty days the ensilage set gained an average of 1 lb. per head daily, and the other set gained 2½ lbs. per head per day. The experiment was then reversed, but the period is not yet complete, 18 days only having elapsed when the report was published. However, during this time, the ensilage-fed bullocks lost 1¼ lbs. per head per day, while those fed on roots and hay chaff gained 1½ lbs. per head daily.

WHAT SIR J. B. LAWES SAYS.

The following questions and answers are found in the evidence taken before the commission, the answers being those of Sir J. B. Lawes:

Q. Supposing that we could show that maize could be cut in September and put into the silo, and that you could get from 20 to 30 tons to the acre, how would you compare the value of a crop of maize with a crop of roots?

A. Well, weight for weight upon the dry matter—some substances having 20 and other 40 per cent., I should say that the roots would contain more nutritive matter than the maize, either in or out of the silo. Weight for weight, I think that roots would be better than maize. If I am right in saying that roots contain more digestible matter, the roots ought to give the best results when mixed with other foods. The dry matter in the maize would be less feeding than the dry matter in the roots. Roots are very good food, because there is hardly any indigestible matter in a root. There is a great deal in straw, less in hay, and very little indigestible matter in cakes. The Germans made experiments in silage, and they said that it did not increase the digestion. The Germans showed enormous losses in the fermentation, but at present English chemists did not see those great losses.

Q. Would not food softened by the silo be more easily assimilated into the system of the animal than food not softened? A.—No; animals seem to have a great power of acting upon dry food.

AMERICAN EXPERIENCE.

With regard to the changes and loss which take place in the silo, let us also quote the conclusions arrived at by Prof. Jordan, director of the Maine Experiment Station,—an eminent agriculturist who has devoted three years specially to this department of the question.

1.—Silage contains more ash, nitrogen and crude fibre, but less total carbo-hydrates, than the material from which it is made.

2.—Green fodder has a larger percentage of nitrogen in the albuminoid form than is the case with the silage produced from it. The average percentage of nitrogen in the non-albuminoid form is, for the green corn, 21.5 per cent., while in the silage from the same material, it is 51.3 per cent.

3.—There is evidently a breaking up of the albuminoids into true amides, most largely into amido-acids.

Let us explain that these amides are nitrogenous compounds, like the albuminoids of the food, but unlike them they are not flesh-formers, being chiefly employed in the production of heat, and have therefore a low feeding value. We now see that investigators on both hemispheres agree as to the loss of nutriment in the silo, although the extent of that loss has not yet been thoroughly investigated, and that these results of analyses have been corroborated by actual feeding tests.

ANOTHER ENGLISH AUTHORITY.

We shall conclude by quoting the remarks of Prof. Warrington, one of England's greatest agriculturists, which were made at a recent farmers' gathering:

"Every new thing people thought was going to do a great deal for them, but a good deal of experience had to be gained before the illusion was dissipated. It was, however, especially applicable in those cases where hay could not be successfully made. But all the chemical investigations yet made on the subject of ensilage by no means bore out the flourishing accounts which the farmer, pure and simple, was indulging in. With regard to the heating process, the chemist at once saw that, by allowing the vegetable matter to get hot, they were burning away part of the food in order to heat the rest. It might be true that by so doing they had got sweet silage, which was enjoyable to animals; but they had effected a waste, and the loss on silos was far greater than what took place in the hayfield. Chemists who had examined the matter found that half the flesh-formers did not remain in the ensilage after fermentation."

We would not have dealt so fully with this question, knowing that very few of our farmers have been affected by the ensilage craze, but as our Government and our agricultural journals have been led astray, we fear that many of our farmers may yet be smitten by the infection. If a mode of preservation can be discovered, which will prevent fermentation in the silo, there can be no doubt of the utility of the system in various respects.

Green Food for Swine.

Prof. S. R. Thompson, of the Nebraska Agricultural College, writes to the American Agriculturist that green food makes thriftier and larger hogs. Farmers who raise many pigs, and feed them exclusively on corn, know that some of the shotes will cease to grow at an early age, begin to lay on fat, and never reach the size of good, merchantible hogs. A pig fed on bulky, green food will develop a larger stomach than one fed on concentrated food like corn; and when you come to fatten it, this enlarged capacity will enable him to eat and digest more corn, and thus fatten faster than the other, and be a more profitable hog to grow for market.

Green-fed hogs are healthier than those grain fed. Every intelligent breeder knows the advantages of feeding green food to sows about to farrow. They have less difficulty with their pigs, are less liable to destroy them, will give more milk, and nurse them better. Grass-fed hogs are less liable to disease. The dreaded hog cholera is not much to be feared where hogs have the run of a good clover pasture. Undoubtedly, if exposed to contagion, they would take the disease, but they are not likely to develop it. For an example, a farmer had his hogs in a small pen, destitute of grass, with no water exept a muddy pool, which was soon made as vile as possible by the hogs. After a while the hogs began to die in considerable numbers, with symptoms resembling cholera. The owner was alarmed, took them out of his pen, turned them on a patch of green rye, and gave them water from a well. The disease was checked and the deaths ceased.

To a hard-working horse, repose is almost as much a necessity as good food, but tired though he may be, he is often very shy to lie down, even when a clean bed is provided for him. Unless a horse lies down regularly, his rest is never complete, and his joints and sinews stiffen; and while it is true that some horses that sleep in a standing position continue to work for many years, it is equally true that they would wear much longer, and perform their work much better, if they rested naturally. Young, nervous horses not unfrequently refuse to lie down when first made to occupy a stall, and, when introduced into a town stable, the habit may be confirmed, unless inducements are offered to overcome the disinclination.

The Farm.

Hard Times.

How the world can suffer starvation in the midst of plenty, is a question which has been agitating the minds of political economists. The world is glutted with food and clothing, so much so that its inhabitants are starving and perishing. Such expressions may seem paradoxical; but they serve to illustrate very forcible truths. We are taught to regard the period of great activity and high booming as the time of great prosperity, individual and national; but in our giddy impulses of morbid activity we are sowing the seeds of disaster.

Elated by a few successful dealings, people become oversanguine. This is the key to the whole mystery. One department of human affairs acts upon another until the whole becomes a hive of industry. For a time human desires increase more rapidly than the supply. Prices of commodities, especially those of a luxurious character, range high, until they run out of proportions to the intrinsic values. The earnings of the people are spent either in flitting pleasures or in articles of commerce on which they hope to realize bonanza profits. Wild prospects are regarded as substantial wealth, upon which all calculations are accordingly based.

The wheel of fortune is reversed; reaction sets in; hopes are blasted; energies are depressed; trade becomes demoralized; confidence is shattered; suspicion seizes the minds of the people; prices are dejected; complaints are lamentable; consumption abates; and this extreme continues until weary monotony infuses fresh energy into the spirits of the people, or until a new race of enthusiasts, oblivious of former woes, rises to repeat the same page of history. We are told that all these evils arise from over-production. This way of putting it is very misleading. In one condition of the human mind, commodities will find ready markets, and trade stagnates when the feelings are in reversed order. There is nothing in the name; it is all a lottery of the pulse, whether known under good or bad times, wealth or poverty, prosperity or adversity, exultation or despondency. In periods of depression it is supposed that the world is waiting for its surplus productions to be consumed. The low prices indicate its inability or unwillingness to consume, and as the consumptive power cannot increase so long as the people are unable to increase their expenditure, the basis of renewed activity must be traced to the pulse and not the power.

There was a time when these matters did not concern the farmers so much as now. Of late years the tendency has been to cast the blame of the hard times on the shoulders of the farmers. They keep their crops in their granaries and will not sell; they run up big store accounts and demand long credits, and many other dreadful offences are layed to their charge.

Let us examine a few of the ingenious arguments of the stock-raisers: When grains are plentiful and cheap, the remedy lies in the increase of live stock; but when they are scarce and dear, the country is then not adapted to grain raising, and beef and dairy products must be substituted; when dairying is at a discount, then the quality of the products must be improved; when beef is demoralized, then the farmer has the manure for his profit and pains: in short, live stock is the only cure for all the ills that the farmer, his soil, and the times are heir to. Diseased farming is the only ailment that admits of but one remedy. In the same manner we might run over the whole list of specialties. If fruits are cheap, why can't the stupid people eat more fruit and make good times? When the stomach rebels against the use of excessive sweets, let the apiary men combine to devise means for compelling the people to eat more honey.

That the farmers can afford to hold on to his stuff speaks well for his prosperity; and he has just as much right to do so as the merchant has to keep his goods on his shelf, or the manufacturer to hold his wares or implements in prospect of higher prices, and yet not a word of complaint is uttered in the latter instances. If business men are compelled to slaughter their goods, they impose the penalty upon themselves, or they choose the recompense of being regarded by their fellow men as being engaged in "respectable" employments. Farmers should regard their occupation as a business, and in their transactions let them drive the hardest possible bargains, just as other business men do, whether it be a reduction in the price of their purchases or an extension of credit. But they should be honest and prompt in the fulfilment of their promises. Farmers as a body are not benefited by the credit system; it is a costly luxury, which in the end has to come out of their pockets in some shape, direct or indirect, besides having to pay for the bad debts of the merchants. Farmers are gradually exercising greater influence over the condition of the times; and it is possible they may make it as powerful a weapon in their hands as organization is in the hands of those who wield its power in opposition to the agricultural community.

The Low Price for Farm Produce—Cheese vs. Meat.

Many farmers are becoming alarmed at the continued low prices for their produce. We have our periods of inflation and depression, and it can never be predicted with certainty how long they will last. Each period comes and goes, and there is no reason why the existing state of affairs should be longer and severer than previous depressions.

A leading cheese-maker informs us that the present low price of cheese—four cents lower than at a corresponding period last year—has had the effect of increasing the consumption of cheese amongst his patrons, more having been consumed during the past month than the whole of last season. A prominent fruit-grower also tells us that small fruits will be plentiful and cheap; but he does not regret this state of affairs, as he thinks that the increased consumption will benefit his business in years to come.

Now these may be considered as trivial matters, but they furnish cheap and nutritious food for thought. If the farmer eats more cheese he must eat less of something else, and the question arises, For what food or foods should cheese be substituted, in whole or in part? The amount of intelligence displayed in answering, or rather acting upon, this question, will be a valuable guide to the continued consumption in future years. It is a question of more practical importance to farmers than many other classes of people. It most directly concerns poor people and manual laborers. Farmers as a rule are not given to luxurious living, and if they can obtain a wholesome and nutritious article of diet at a low cost, they are justified in using it, even if it does not just tickle the palate as sensibly as the more pronounced articles of luxury. No man so richly deserves a first-class certificate of character as a good cheese-maker; he can rightfully request such a certificate from the chemist, from the doctor, and from the cheese consumer, which compliment can be paid to very few articles of diet. The consumer, however, has his duty to perform; he must eat on hygienic principles, if he wishes to obtain the best results.

Cheese is not an exact substitute for any other article of food; but if only one of the ordinary articles of consumption were to be displaced by it, that article should be meat; not because it is near it in chemical composition, but also because it is more animal than vegetable in its character. There is a great difference in the cost, however, meat being the dearest of foods and cheese one of the cheapest. One pound of cheese and one-half pound of bread has somewhat more nutriment than two pounds of meat, and the cost of the former will be: 1 pound cheese, 6½ cents; ½ pound bread (baker's price), 1½ cents; total, 8 cents; while two pounds of meat (butcher's price), will be 24 cents. Meat is much bulkier than cheese, for it is about three-fourths water, while cheese is only about one-third water. However, the substitution of cheese for meat means a radical change in the whole system of dieting. In the present system of cooking foods a large percentage of the mineral matter is lost, necessitating the consumption of meat, which contains large quantities of salts. Cheese is also lacking in salts (mineral matter), and the only available way to make up this deficiency, apart from meat, is by consuming large quantities of fruit, especially small fruits; and as fruits are bulky they make a splendid compliment.

There is a great difference between one make of cheese and another, but the above remarks refer to the best brands. A good cheese must be soft, fatty, and ripe, these being the conditions of digestibility. We fear our farmers are eating too much unripe cheese, which fact will be against the prospects for permanent consumption in future years. We know very little about the digestibility of our different makes of cheese, but the Germans, who take the lead in these and all kindred questions, have tested nineteen brands, and found that the best, viz., the Cheddar, became completely digested in four hours; while the worst, viz., the Schweizer skim, scarcely began to digest in ten hours. Good cheese is therefore equal to meat in digestibility. The fats in the cheese are much superior to those in the meat, and the other constituents are, on an average, not inferior. It may well be said that there is nothing better than a good cheese, and nothing worse than a bad one. But, to do justice to meat, it possesses another important virtue; it requires little or no mastication. Our cooks, millers, etc., now-a-days have undertaken to

do most of our mastication for us, so that we are unable or unwilling to do do it for ourselves. They claim that they are doing us a benefit by saving our jaws and our stomachs so much labor, but they are positively the insidious enemies of mankind.

We do everything scientifically these times—except eating and wearing. We are accomplished in everything except in matters pertaining to our health. We must eat as well as clothe fashionably. The tyrant fashion has more victims than all the other evil powers combined. Were it not for his dominion over us we could live luxuriously on ten per cent. of the present cost of our articles of consumption, and mankind would be wealthier, healthier, and happier.

How Weeds Multiply.

The botanist of the Ohio Agricultural Station has been making estimates of the number of seeds found upon a single plant of several of the most obnoxious weeds grown in that State. n the Shepherd's Purse he found that the number of seeds in each silicle or seed vessel varied from 18 to 34—average about 25, and 1500 silicles were counted upon a medium sized plant, making the total number of seeds per plant 37,500. Computing in the same manner, he estimated the Dandelion to contain 12,103 seeds in each plant; Wild Pepper Grass, 18,400; Wheat Thief *(Lithospermum arvense)*, 7,000; the Common Thistle *(Cirsium lanceolatum)*, 65,366; Camomile, 15,920; Butter Weed, 8,587; Rag Weed, 4,366; Common Purslane, 388,800; Common Plantain, 43,290; Burdock, 38,086.

These figures will give a faint conception of the possibilities of weed multiplication; and will show the necessity of observing the habits of weeds and of preventing their running to seed. Fortunately may of those seeds do not find favorable conditions for growth, else there would be no practical means of eradication; and the main object of the farmer should be to make the conditions for dispersion, germination and growth as unfavorable as possible. The forces employed for their disposal are winds, streams, tides and ocean currants, and the agencies of man and the lower animals.

With regard to the duration of growth, the report makes the following observations:

"Like other plants, weeds may be divided into annuals, biennials, and perennials. The natural history of each species should be well known, for upon this is based many important remedial measures. As a rule, annual weeds are largely confined to cultivated areas. They should be closely watched, and never allowed to interfere with the growth of the crops. By neglect we suffer the double injury of lessening the yield of the crop in which they appear, and providing a supply of seeds so that the pests will be continued, thus causing future trouble.

"Biennial weeds, for the most part, produce no seed the first year, but seed is often produced quite early the second season. On this account they should be destroyed during the first year of their existence. Most of the worst biennial weeds have fleshy or tap-roots. In exterminating these plants just as much of this root should be cut off as possible.

"Perennial weeds are those the tops of which die down at the approach of cold weather, the roots remaining alive, and from them new shoots are sent up year after year. Many perennial weeds produce their flowers and seeds much earlier in the spring than annuals. On this account they should be most carefully watched. They are apt to be most troublesome in pastures and meadows, and are often very abundant along roadsides and fences. They should always be cut before they blossom, or at least before any seed is matured.

Gentlemen Farmers—Their Influence for Good and Evil.

Of late years many business men and members of the different professions have manifested a strong tendency to engage in agricultural pursuits, some being retired gentlemen, and others actively employed in their profession or business. They are known to practical farmers under various reproachful epithets, such as "kid-glove farmers," "book farmers," and in the Southern States they are called "Latin farmers."

This movement has been chiefly caused by the rapid advancement made in agricultural science. Most professional men become enamored with some department of science, and it is reasonable to suppose that agricultural science should receive its share of devotees. So rapidly has this movement taken place that the demand for farm managers of the right stamp has been vastly greater than the supply. Such men are required not only to have practical experience in farming, but also a knowledge of the science of agriculture, and can readily command a salary of $1,000 to $1,500 a year. The men who own and conduct these farms are those who have been successful in business, and have consequently utilized their business qualifications in their farming operations, to which their success has been mainly due. Each farm of this nature is an experiment station to some extent, and if one or two could once be established in every township, it would be the best means of giving an impetus to agriculture. It cannot be said that every undertaking of these professional farmers turns out to be a financial success; but the surrounding farmers can learn as much from their failures as from their successes. They undertake more risks than practical farmers as they usually spend their money as much for enjoyment as for profit. Their farms are stocked with the finest herds, grazing upon the most luxuriant permanent pastures, upon a well drained soil, and all other improvements to correspond.

It is to be regretted, however, that too many of these farmers turn out to be speculators of the worst kind. They deal in such fancy stock as their fancy leads them to. They ruin the constitution of their finest animals in their mania for prizes at exhibitions, and their insatiable lust for notoriety. There is no class of people in the world which does so much good and harm as these speculators. Too many innocent farmers are apt to be wheedled into their ring, and end their career in disaster. There must be a sharp line of demarcation drawn between gentlemen of this character and those who have engaged in progressive agriculture out of pure love for the science it contains.

While recently in Hamilton we called on Mr. Valancey E. Fuller for the purpose of attempting to settle some disputes which we had with him with regard to the tests of Jersey cows. Mr. Fuller is the largest and most successful breeder of Jersey cattle in Canada. Although a successful lawyer and still actively engaged in his profession, he is the owner of 365 acres of land at Waterdown station on the G. T. R., five miles from the city of Hamilton. It is astonishing what progress he has made during the short three years of his ownership of "Oaklands" Many of his friends and neighbors predicted that he would ruin himself by the enterprise, as he was inexperienced and the soil of the farm was considerably worn out. However, his attachment to the science of agriculture could not be suppressed. Now his farm and his stock are the admiration of this whole continent, and he has won for himself and for Canada an imperishable name. He is progressive in all his methods of agriculture, and many of those practical farmers who jeered at his undertaking are now beginning to adopt much in his system. He scorns speculation; and although his herd contains some of the finest animals to be found in the Jersey breed, yet he does not pamper them. They are sold upon their known merits, and the demand for them is much in excess of the supply.

He courteously took us out to see his stock, and we found them in a fine, healthy condition. They are perfectly free from disorder, being fed and exercised in such a manner as is most conducive to their health. We saw his dairy in operation; he has a DeLaval cream separator, feeding the calves with the skim-milk after they are a week old. We tasted butter of the choicest quality, for which he obtains the highest price from special customers in Toronto, viz., 35c. to 40c. per pound.

The exceptions which we have taken to the Jersey tests will be found in another column. Mr. Fuller bears the honor of being the father of these tests, and is therefore anxious to make them as popular as possible. He agrees with us as to their imperfections, but pleads time to have them placed on a higher standard. He informs us that the Jersey Club has made material alterations in their system of testing for the ensuing season.

The best practical proof of the confidence and respect entertained of Mr. Fuller by the farmers of Wentworth, and of the interest which he takes in agricultural progress, is his election as president of the Wentworth Farmers' Institute, which is rapidly becoming an influential body. He wields a great power for doing good to agriculture in all its aspects, and we are pleased to see that such a power resides in the hands of one who is both able and willing to exercise it to the best advantage.

Flies may be kept from annoying horses by making a wash of carbolic soap and water, with a small quantity of kerosene oil added to it. This is sponged over the horse's coat and let dry two or three times. Its effects remain for about three or four hours. By repeating it at intervals the flies may be prevented from annoying the poor animals at this season. Another remedy is to procure Persian insect powder; put a quantity of it in a common flour dredger or large pepper box and dust it well into the hair. This is sure death to flies and harmless to animals. If it is blown up into the air of the stables at night and dusted well upon the posts and ceiling, as well as the animals, these will enjoy a good night's rest. It will also clear flies and mosquitoes from rooms. Yet the best protection from flies is a full-sized cover when in the open air and a rather dark stable when at rest.

Rust and Smut.

Within the present century a number of professional microscopists have distinguished themselves, and the aid which they have given to agricultural science is underestimated. In some instances they have struck out into new fields of investigation, and in others they have come to the aid of chemistry and other sciences Microscopic investigations are still comparatively young, and from an agricultural standpoint, they have been chiefly confined to parasitic fungi in plants. Much has been ascertained with regard to the life history of these minute organisms, although practical remedies have not always followed ; but by knowing the history the remedy becomes more apparent.

The condition which we call rust is caused by minute parasitic plants, most of the species being too small to be detected by the naked eye. Many thousands of these plants have already been classified and described like other plants, and new species are fast being discovered. They become visible, however, by their manner of growth, viz , in masses. The spores or seeds are, of course, still less distinguishable, and can be seen in none of the species without the aid of the microscope. But there are certain indications of the presence of rust, such as the discoloring of leaves in spots, when they sometimes wither and die. Like destructive insects, these parasites have their favorite pasture fields, so that simply by knowing the affected plant, the name of the species of fungus may frequently be known with tolerable certainty, although some of these parasites often attack more than one species of our cultivated plants.

It must not be supposed that these fungi produce nothing but rust and smut. It is the cause of all kinds of fermentation; it sours the milk, rots the wood, decays the fruit, putrifies animal and vegetable substances, and causes disease in animals. The black-knot, so destructive to the plum and the cherry trees, is also a fungoid growth, as is also the spots found on the potato leaves, causing a rotting of the tubers. It is now time for scientists to pay more attention to remedial measures. Rust is propagated by rusted straw through the manure heap, and through the droppings of animals that have eaten rust in their food; but if the heap is fermented, or the manure remains for a season in the yard before it is applied, the spores germinate and thereby become destroyed.

The smut fungus is a parasite of a different nature. So far as known it is confined to the cereals and grasses; hence by changing the crop the vitality of the spores will become lessened. Precaution must be taken that there be no smut in the grains of neighboring fields, for the spores are liable to waft. Wheat, oats, and barley are liable to some variety of this parasite. The spores are exceedingly minute, —about 7,500,000 can be placed side by side in a square inch,—and although they have strong vitality, they require a certain degree of moisture for their germination. A single spore may, under favorable conditions, affect or destroy a whole plant. The spores, while the grain is being threshed, are very liable to become attached to the minute hairs which are found on the germ end of the grain. Whether left in the ground or on the seed grain, they commence to grow in spring by throwing off buds which fasten themselves to the cultivated plant, and grow up with it, living on its juices, and thus weakening its vitality. The slender filaments of the fungus grow up between the cells of the straw, throwing out shoots into these cells, by means of which the parasite feeds. It finally finds its way into the ear, where it feeds upon the milky juices of the kernels. At first it appears as a blackish, slimy mass, but gradually increases in consistency until it forms a smut ball, containing myriads of spores.

Several successful remedies have been employed for destroying smut, the most popular and effective being that of sulphate of copper, also known as bluestone and blue vitriol. The users of this remedy differ very much in opinion as to the quantity to be used, depending probably upon the quantity and vitality of the smut spores. An English authority, Mr. A. J. Burrows, F. R. G. S., of Puckley, Kent, in a recent article on the subject, says: "We were once very much troubled with smut, but the practice of dipping all seed wheat into a solution of bluestone and water before planting has well nigh eradicated it upon all our best cultivated farms. Here we use about a pound of the vitriol to six bushels of wheat, dissolving it first in hot water ; but the most economical way I find is to make a tub of the mixture and immerse the wheat by means of a dipping basket. I have seldom seen smut in the crops after the seed has been thus treated." A pound of bluestone will dissolve in about five quarts of water. It is the impression of some farmers that this remedy destroyes the vitality of the seed to be sown ; but no apprehension need arise in the use of moderate quantitie . Smutty heads of grain should be gathered and destroyed as soon as they make their appearance, and no grain should be used for seed in which smut is known to exist. The greatest caution should therefore be exercised in the selection of seed.

Milk and Eggs as Food.

Average eggs weigh about eight to the pound. Thus a dozen weigh one and a half pounds. A pound of eggs contain more nourishment than a pound of meat and bone. Hence eggs at 24 cents per dozen are as economical a food as beefsteak at 16 cents per pound. There is no flesh food that may be served in so many palatable ways as eggs, nor so easily obtained by farmers. They may be boiled, poached, scrambled, fried, made into omelets plain or mixed with herbs or salted meats, and used in a great variety of ways in cake, Indian bread, and other cookery. Thus there are few seasons when it will be good economy in the farmer's family to stint themselves in this easily assimilable and nutritious food. Every family having an ice-house or other cold storage, should preserve a good supply to be used when they are scarce. They be may kept fairly well in a cold cellar if put down in the autumn.

One reason why persons suppose eggs lack nutrition is that they are in a semifluid state. Yet heat readily converts them into a solid by coagulation. Like milk, eggs are a perfect food, containing all the constituents of nourishment, and, like rare roast beef, soft boiled eggs are digested in three hours. Milk, like eggs, is capable of great variety in the cooking, and milk and cream should constitute a considerable portion of the diet in farm life, especially in the preparation of puddings, sauces, and the many dishes that form palatable accessories to table enjoyment. It is, therefore, bad economy for the farmer's family to stint themselves in milk, cream and eggs, on the ground that they are not solid food. Salt pork, bacon and ham are indeed solid food in the sense of indigestibility. It takes five hours to digest either, and only strong stomachs can bear them. They should be used more as relishes than as true food on the farm in summer, as they are everywhere else. It should be remembered that it is simply the juices of any food that serve the purposes of digestion.

It is only that portion of any food that is soluble in the fluids of digestion that is assimilated and taken up by the system. Fresh meat is largely water—about 71 per cent., and that of eggs about the same, or about that of blood, which contains 3 per cent. more. The marketable meat of the ox contains 10 per cent. bone, so that this again would bring eggs fully up to the standard of lean meat. The fact that the farmer is compelled to depend so largely upon salted meats in summer, and the added fact that milk, cream, and eggs are especially valuable in the preparation of salted meat dishes, render careful thought on the subject all the more necessary.—[Chicago Tribune.

Corn vs. Ensilage.

The New Jersy Experiment Station, which has been conducting some valuable experiments in ensilage, wanted an answer to the following questions :

1. How much digestible food can be secured from one acre planted in field corn, and how much from a corresponding acre planted in fodder corn ?

2. What is the value per acre of gathering a crop of field corn, and preparing it for dairy food ; and what is the cost per acre of ensilaging a crop of fodder corn ?

3. What is the relative feeding value of the digestible food in corn meal, in dried stalks, and in corn ensilage ?

4. How much potash, phosphoric acid, and nitrogen are removed from an acre by a crop of field corn ; and how much by a crop of fodder corn ?

Having tested, analyzed, and figured to the best of its ability, the Station arrived at the following results : The corn meal, dried stalks, and cobs produced digestible matter valued at $68.21 per acre, while the digestible food in an acre of ensilage only brought $62.33. The cost per acre of producing the corn meal was $14.95; corn stalks, $7.76; total, $22.71, while the cost of ensilaging an acre amounted to $26.41, showing a balance of 15 per cent. in favor of field corn. Actual feeding experiments were also made, the result being that the digestible carbo-hydrates in the field corn, stalks and in the corn ensilage, were quite as valuable as those in the corn meal. In the experiment with regard to the quantity of plant food removed from an acre of soil, the slight difference is not worth mentioning, the quantity of potash having been somewhat more in the field crop than in the fodder crop, although the total value of the nitrogen, phosphoric acid and potash removed from the soil in each case was practically the same.

This experiment, although in itself may not be regarded as of much value, yet it adds considerable weight to the evidence already contained in other investigations as to the futility of attempting to make ensilage a practical success, unless some radical changes are made with regard to the modes of preservation.

English Experiments with Fertilizers.

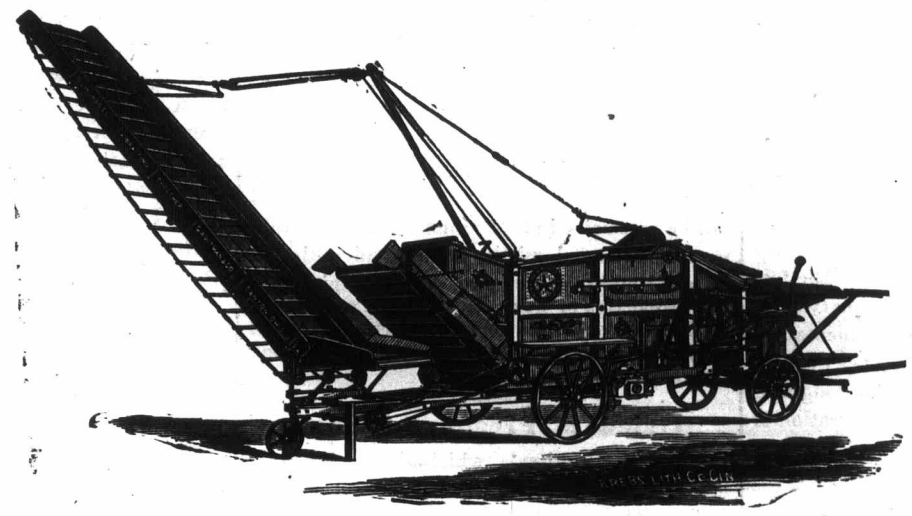
Sir J. B. Lawes, who has been conducting agricultural experiments during the last 40 years at Rothamsted, England, has been accumulating facts and figures which should be studied by every farmer in all parts of the world. With regard to his field experiments, he has produced an average of 14 bushels of wheat per acre without applying any manure or fertilizer; with 12 tons of farm-yard manure per acre each year, he has obtained an average yield of 32 bushels 12 quarts per acre; with mineral fertilizers, 15 bushels and 1 peck; with nitrogenous fertilizers, 22 bushels; with complete fertilizers, 32 bushels and 3 pecks.

These experiments prove that wheat can be raised for a long series of years by concentrated fertilizers as successfully as by farm-yard manures. They also prove that if the former are unskilfully used, the results are about the same as when no manure or fertilizer is applied. The chief practical lesson to be drawn from these experiments is that if farmers would study the requirements of their soil, they could always utilize fertilizers profitably, while by the hap-hazard mode of application, such as at present exists—using any brand for any soil or crop—the chances of continuous success are so rare that it would not be advisable for them to risk the purchase of any fertilizers.

With rank growth we usually expect a bountiful harvest. Also, it helps very much to suppress weeds. Another advantage is, a rank growth seldom suffers from drouth, severe and protracted enough to nearly ruin lighter crops which did not shade the ground. Again, rank growth has power to resist depredations of insects. Colonel Curtis lately noted that "the rankest growing potatoes received very little injury from the bug." I was impressed by the same fact this season, daily seeing a neighbor's crop on rich land, planted thick in drills, and then growing so rank as to completely cover the ground while standing, or before they lodged down. There came apparently about as many bugs to these potatoes as we would have found on the field even with one-fourth the amount of growing tops. Nothing was done to kill the bugs, and yet one could scarcely see any damage they were doing, and now, as the crop is just matured, it does not look to be any the worse for the bugs.

Threshing Machines.

When a boy in England, over half a century ago, we well remember the land being plowed with a wooden mould-board plow, and the harvest all reaped with the reaping hook, threshed with the flail, cleaned with hand sieves, shaking the grain before the sweeps or fanners, which consisted of four sacks tacked on to four sweeps, which were turned by a wooden crank. We used all the above named implements, and have noted the progress till we come to the sulky and steam plow, both of which we have seen used. Many a back-ache have we had from swinging the grain cradle, but no work was ever half as distasteful to us as working before the old drum or spike thresher, when threshing rusty grain. The beautiful threshing machines of the present day have been what we considered perfection. The very best that have been made have appeared in the advertising columns of this journal, and we have heard no complaint of the efficiency of these threshing implements, although we have heard some dissatisfaction expressed about some others when compared with the implements we have spoken of, and to which additional improvements are being added.



COMBINED THRESHER AND STACKER.

The accompanying illustration represents a swinging straw stacker, which can be shifted and changed from one side of the machine to the other while the machinery is in motion, thus dispensing with many hands in moving the straw and saving time. The advantages are plain to be seen. This is constructed by the Joseph Hall Manufacturing Co., at Oshawa. It is attached to their new Model Vibrator, for which they claim many advantages: 1st, in the construction of the frame, which is made light, and yet so strongly bound together with iron rods that even if tipped over, it would not be apt to break; the cylinder is run on a new adjustable brass boxing; the straw is so separated that it is impossible to waste the grain; the sieves will not clog even in wet or damp grain; the teeth are made of specially prepared steel, that can hardly be worn out or broken, but can be bent. Their steam engine is constructed of steel boiler plates and boiler tubes, and has a perfect spark arrester. Their horse power is safe and good, being so constructed as to save considerable power when compared with those formerly constructed by them. The gearing is encased, thus preventing the possibility of many such accidents as are heard of every year. In addition to this, it has a brake attached, which is at the command of the driver, and thus in case of necessity or desire to stop, the whole machinery can be easily and immediately checked. They also construct the most convenient water and fuel tank to accompany these engines. On the whole, this company claim to construct the most complete and best lot of threshing implements procurable.

The recent official report from the Agricultural Bureau at Washington, shows the injury to the winter wheat crop to be greater than appearances indicated the first of April. The roots were killed in the central belt even worse than was supposed. The average of condition in the principal wheat-growing States is as follows: New York, 95; Michigan, 100; Ohio, 59; Kentucky, 45 Indiana, 70; Illinois, 42; Missouri, 60; Kansas, 62. The general average is seventy instead of seventy-seven in April, reducing the indicated production of winter wheat to about 240,000,000 bushels.—The condition of rye is lower than was reported in April, though much higher than that of wheat, the average being eighty-six. The condition of barley is much higher than that of wheat, but less favorable than that of rye; the average is eighty-two, which indicates a reduction of several millions of bushels, unless the future shall show a marked improvement. The averages of New York and Michigan are high, but the California average is only seventy-four, and the prospect is poor in the Ohio Valley.

What is the record of your best cow during the past month; also of the worst, and finally of the whole herd?

The simplest and most effectual remedy for colic in horses is an injection of cold or tepid water—70 to 90 degrees. The injection of 4 to 6 will start the wind and bring instant relief.

It is said that Chicago has 15,000,000 bushels of wheat in her elevators, and Milwaukee 8,000,000 bushels. The wheat cannot be safely kept stored in these cities during the approaching hot weather. It must be moved in any event before the new crop is thrown on the market.

In North Carolina a trick of some small fertilizer companies has been discovered; fertilizers of extra quality are shipped into the State early in the season, so that they shall be sampled and analyzed by the Agricultural Department; then, later, basing their trade on the published reports of these analyses, these same companies distribute goods of a poorer quality for sale.

Veterinary.

Diarrhœa in Foals.

No disease is more prevalent, amongst sucking animals, and few so fatal, as diarrhœa, says Dr. Reynolds. Although less subject than calves, foals are often carried off by it within a short space of time. The causes have not been accurately determined, but the most eminent veterinarians attribute it to changes of unknown character, and brought about by unascertained causes in the composition of the milk.

Two facts relating thereto have, however, been proved, viz., that the causes are often widely diffused; and, secondly, that their potency is increased by defective hygienic surroundings, especially unwholesome stable accommodation and overcrowding of animals. Unless curative treatment is very early adopted, an unfavorable issue is almost certain, and the generally fatal nature of the disease gives little hope of cure when the symptoms have become fully developed.

At the outset a full dose of castor oil ought to be given, the action of which is to be followed by repeated small doses of carbonate of iron and carbonate of soda, with laudanum and brandy, given in cold ricemeal gruel. As food. beanmeal made into the consistency of milk, and given at short intervals, is extremely beneficial, and should take the place of a large portion of the mare's milk. The diet of the mare is to be completely changed, and the foal and dam promptly removed to other quarters.

As curative treatment is so rarely successful, efforts must be made for preventing the disease, the provision of good, dry, clean lodgings, pure water and the occasional administration of alkaline carbonates to the mare.

Diet for Health in Horses.

"Constant Reader" says his horses are often troubled with constipation in winter, and he is of opinion that it proceeds from a constant dry diet; while in summer he gives them a short run at grass, or he feeds a small amount of grass every few days in manger, and to this he attributes exemption from constipation in summer. He wants to know what diet he can adopt in winter to avoid this trouble without resorting to medical remedies.

We think our correspondent is investigating in the right direction. Animals ought to be so fed as to maintain health without a periodical resort to medicine. But he must also remember that the horse often loses health from improper work. The horse should never be put to active work immediately after a full meal, and there should always be a due mixture of concen trated and fibrous food in the ration. Or, in other words, the grain should be fed with the hay. Horses being fed upon a large proportion of coarse, dry fodder in winter, are very apt to become constipated, and have a rough, staring coat. Grass is laxative, and, of course, modifies a hay ration. But one of the most fruitful causes is found in the fact that, as a general rule, the grain and hay are fed separately, and when the grain is cornmeal, this enters the stomach in a solid, compact dough, too condensed for the gastric juice to penetrate and circulate through it. This often causes fever in the stomach—result, colic. Oats is not so bad, because there is 30 per cent. husk. This husk renders the food, after mastication, porous, so that the digesting fluid can act upon it.

Our correspondent will remember how often we have urged all feeders to give as great a variety of food as they can in the rations for their animals. It is not well to feed a single kind of grain, but several kinds ground together; and to effect the purpose of our correspondent, and prevent constipation, a small portion of flax seed—say to 950 lbs. of corn and 950 lbs of oats, add 100 lbs. of flax seed. Let these be all mixed and ground together. This small proportion of flax seed will render the ration slightly laxative, just enough so to keep the bowels cleansed and the coat of the horse bright and lively. There will be no constipation, and the horse will keep a fine appetite, and be in fine condition, with the ordinary ration. But to produce the best result, this ground feed should be mixed with cut hay before feeding. There should be twice the bulk of cut hay there is of ground feed. If four quarts of the ground grain is given at a feed, mix this with one peck of hay, after slightly moistening the hay, so that the meal will stick to it. Care should be taken not to get the hay too wet, as that will cause some horses to swallow without sufficient mastication. Flax seed is now purchasable, in many places, at two cents per pound, so that it will not be expensive in that proportion. The grain may be corn and millet, or oats and millet, or oats and middlings, or peas and corn, mixing in the proportion of flax seed. If flax seed is not to be had, one pint to one quart of oil-meal may be substituted.—[National Live-Stock Journal.

Hygiene of Pregnant Animals.

With those animals which are employed in labor, it is well not to work them severely nor fatigue them much, and particularly as pregnancy is advanced; and, on the other hand, absolute repose is pernicious. *Exercise* is most beneficial, and the most difficult cases of parturition occur among animals to which this is denied. The pregnant mare will accomplish ordinary and accustomed work, particularly if it be slow, without any harm, perhaps with benefit, untill the seventh, eighth, or ninth month, when more care must be observed; but moderate exercise should always be allowed up to the period of parturition. Harness is preferable to saddle work for pregnant mares; and fast trotting, galloping, jumping, traveling over broken grouud, or severe and sudden exertion, injuries, or shocks of any kind, are to be avoided—in fact, extremes should be guarded against.—[Fleming's Veterinary Obstetrics.

Smut in corn may produce various fatal disorders, as anthrax fever, intestinal fever, abortion, impaction of the stomach, gangrene of the extremites, and the so-called "mad itch," or erysipelas, its effects being somewhat similar to these of ergot. It has also been asserted that wheat smut produced abortion and gangrene, although this has been denied by some authorities.

Dr Gadsden of Philadelphia, a distingaished veterinary, having gathered facts from 25 years experience, expresses his conviction that animals never recover from pleuro-pneumonia, but in apparent recoveries the disease assumes the chronic form and may be transmitted. He quotes several leading authorities to support his position.

Poultry.

Seasonable Hints.

BY L. G. JARVIS.

We are not nearly over the egg shipping season, and our present object should be to make the most we can out of our growing chickens. We naturally enough want to make as many fine birds out of them as we can, whether we exhibit or not, for if we have fine exhibition birds some one will want them, and they will command a good figure. But while breeders are thus employed, those who have the management of our poultry exhibitions in their hands should also be busy with the arranging of the coming shows. We do not hold shows for the sole purpose of awarding premiums to a successful breeder, but for the purpose of educating the amateurs in the business—of showing what is the difference between a scrub and a standard bird. And while we are endeavoring to educate our amateurs how to raise chickens, how to pack eggs for shipping, and how to box fowls for shipping, it would be well for some of our older fanciers also to stand by and learn a little. All associations should offer premiums for the best methods of shipping eggs and the best method of boxing fowls for shipping, that all might learn a little on this matter. In all things pertaining to the poultry business there is no matter less understood nor so outrageously neglected.

Think of purchasing two sittings of eggs and on their arrival find nine broken out of the lot! Think of buying thirteen pounds of live chicken in a box weighing forty pounds! Think of the disgust of the consignee in such cases, of his disappointment, his loss, and "cuss words!" Yet I have seen such cases as above referred to, and know of equally as bad cases. Now I know of no way in which to get over this difficulty but to give premiums at our fall exhibitions, as well as our winter shows. Let all societies offer a first, second and third premium for the best methods of shipping eggs and fowls, and a revolution will be wrought in the business. I am satisfied many an amateur became disgusted with the poultry business when he saw his first venture—a basket with two or three dozen eggs—a mess of scrambled eggs on arrival, or saw a trio of fowls in a dirty box, probably used the week before to carry a trio or more of pigs to market. Beginners in poultry breeding have much to learn, and many of those, too, who are not beginners, and when we have once reached the point that we can see how ignorant we are of the most important principles which lead to success, then we are on the home-stretch, and if we hold on faithfully, will not be outstripped in the race.

HOW TO PRESERVE EGGS.

Pour four gallons of boiling water on four quarts of quicklime and one pound of salt; when cold mix into it 2 ozs. of cream of tartar and stir well with a stick. The following day you may put the eggs in very carefully not to crack them. After the lime has been well stirred in the boiling water, a large part will sink to the bottom, on which the eggs will rest. The mixture should be made in a wooden vessel, and when cold poured into a well-glazed earthen vessel or pan with a cover; add water

from time to time as it evaporates, and see that the liquor always covers the eggs.

Fowls during moulting season require more warm and more generous diet during this time of drain upon the system.

Don't keep too many fowls upon one place, and never attempt to keep a dozen varieties within the space that should be properly devoted to only one kind.

Be sure that the ground floor in the poultry house is enough higher than the surrounding ground to keep it perfectly dry. Damp floors are very productive of disease.

For canker sores in the mouth, or any part of the head, make a solution of alum and water, that is, put in as much pulverized alum as the water will take up, and dip a feather in this and touch the cankered spots two or three times a day.

It is not necessary to feed newly-hatched chickens for the first twenty-four hours after they are out of the shell. Just before hatching the remaining portion of the yolk in the shell is taken into the stomach of the young chick. The chick is formed from the white of the egg, the yolk being its rations, so the young brood need no feeding for some time. When they are strong enough to move about nimbly, then they are old enough to feed. Crumbs of stale bread soaked in milk are good for the first feed.

Packing Eggs for Winter Use.

As the price of eggs is usually low at this season, a large number may be packed and stowed away until prices become higher, says the Farm and Garden. It is not necessary to keep eggs six months, though they may be kept a year with care. Prices fluctuate very much, and three months make quite a difference. Opinions differ as to which is the best method of preserving eggs. The usual practice is to pack the eggs in salt, not allowing them to touch each other, filling the spaces well with the salt. Boxes should be used, and the small sizes are best. The eggs are placed on end in the salt, and when the boxes are full, the tops are screwed on tightly. The secret of success is to turn the eggs at least three times a week, which is done by turning the boxes upside down. The difficulty with preserved eggs is that the contents, if the eggs remain in one position, settle and adhere to the shells. This cannot be avoided whatever the method or process may be, but if they are packed in boxes, and the boxes frequently turned, as mentioned, the difficulty will be greatly lessened. In addition to salt as a packing, coal ashes, plaster, well-dried oats or corn, and even dust may be used, but salt is best. Dry processes are more convenient than the liquid methods, and the later they are preserved the better. The chief point to be observed, however, is to frequently turn the eggs, and to keep the boxes in a cool place.

A wag having been informed that a certain cow produced 35 lbs of butter in a week, exclaimed: "Lor, and what did the owner's family do for butter all the rest of the year?"

The Apiary.

Honey.

BY G. B. JONES.

EXTRACTED HONEY is obtained by means of a honey extractor. The combs from which it is to be taken are uncapped and placed into this machine, which, when operated, separates the honey from the comb by centrifugal force. The honey is then drawn off through a faucet, and the comb returned to the bees or not, as considered best.

Extracting should begin as soon as the brood chamber becomes clogged with honey sufficiently to prevent the queen laying to her full capacity, and repeated as often as, but no oftener, than is necessary to keep the brood chamber open to the queen. The one-story hive has less room than a two-story one for the accumulation of honey, and so must be oftener treated (which is a serious objection to it), and for its manipulation for extracted honey no better rule than the above can be given here. But if we use the two-story hive, then we can regulate our time for extracting so as to procure the best results, as follows:—Until the clover has begun to yield plentifully the bees should be kept confined to the lower story, as directed last month, and this should be kept freed from honey, except a little (say an inch) along the top box of each frame. As soon, however, as the clover harvest is well in, the upper story should be put on. It should contain two or three cards of hatching brood from below, whose places should be filled by nice clean combs, or full sheets of foundation. A division board must be placed on each side of these combs, and a quilt upon them; also a quilt over each set of uncovered combs of the brood chamber. The bees will follow the brood, and as fast as it hatches out will fill its place with honey, while the queen will fill the new combs below with eggs. By the time these upper story combs are nearly full of honey, some empty ones (or full sheets of foundation) should be interspaced with them, and every drop of honey extracted from the brood chamber. When these last combs are nearly filled, take another card of hatching brood from below, and in its place put an empty comb or full sheet of foundation. Put the card of brood into the upper story, and as many combs or full sheets of foundation as are required to make up its full complement. By this system of manipulation the bees have not only been given storage room as they needed it, but have been gently coaxed to use it, and, at the same time, the queen has been supplied with empty brood combs, the best way to stimulate her to lay to her very utmost. By the time the last combs given them are filled, the first ones will be sealed over and ready to extract. This system also allows the honey time to ripen without in any way cramping the surplus department. When extracting, remove only the full combs which are at least half sealed over; spread the others towards the sides of the upper story, and in the centre put empty combs. Tho partly filled ones will be ready to extract next, and so on. The combs taken from one hive, when empty, will do t replace the full ones of the next.

EXTRACTING.—Have a good extractor in first class order; the best honey knife you can get, and sharpened to a razor edge; some efficient substitute for a capping can; a large pickle crock or headless ten-gallon keg will do, if a wire cloth bag about a foot deep and the full size of the mouth of the vessel be hung over it; across the opening of this bag secure a wooden strip an inch square to rub the knife upon when clogged with cappings. Have all these implements placed conveniently in a bee-tight room near the apiary. Now light a good smoker and proceed to the hive; do not blow smoke in at the entrance, but remove the cover, raise one corner of the quilt, puff in a little smoke and raise the whole quilt gradually from the corner, at the same time deliver a continual cloud of smoke, but it must not be hot or strong. As soon as the bees have quieted down, remove the combs to be extracted one by one, carefully shaking as many bees as possible from them, or brushing the rest with a goose wing, in front of the entrance. As each comb is cleaned, place it into a comb bucket or spare story, and give the bees an empty one as directed above. When all are ready carry them to the extracting room, and uncap each as carefully as you can on both sides, and place it into the reel opposite another of as nearly as possible the same weight, and work the machine. When all are done take them with you to the next hive and put them in place of its full ones, and so on.

THE CARE OF EXTRACTED HONEY is of the greatest importance, and if neglected the flavor of honey is spoiled or destroyed. As soon as extracted the honey should be strained through a piece of green baize into a can which will hold at least twenty gallons, and having a faucet at the bottom. Here it should stand for a weeek or more, in a warm room, with a light cotton cover. After this it may be drawn off into the vessel in which it is to be sold, and left standing uncovered till all the bubbles have disappeared, when it should be sealed up tight, and kept in a warm, dry and dark place till disposed of. The last quarter of the honey drawn off will be poorer than the rest, and should be used for feeding, cooking, &c., or sold as second quality at a lower price.

Section honey next month.

The Canada thistle perpetuates itself chiefly by means of root stalks, which are full of dormant buds, and hence any piece an inch long will send up a stalk. A single plant in an ordinarily cultivated field will soon spread all over it by means of the roots.

The following tabular statement issued by the U. S. Department of Agriculture, exhibits by sections the cash rates without board, showing the gradual decline of inflated values of the speculative period, the undue depression of the era of the panic and the ultimate recovery in 1882, with the changes indicated by the present returns of May 1st, 1885:

Section.	1885	1882	1879	1866.
Eastern States....	$25 30	$26 61	$20 21	$33 30
Middle States....	23 19	22 24	19 69	30 07
Southern States...	14 27	15 30	13 31	16 00
Western States...	22 26	23 63	20 38	28 91
California.....	38 75	38 25	41 00	35 75

Correspondence.

NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post-Office and Province, not neccessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. If an answer is specially requested by mail, a stamp must be enclosed. Unless of general interest, no questions will be answered through the ADVOCATE, as our space is very limited. 3. Do not expect anonymous communications to be noticed. 4. Matter for publication should be marked "Printers' MS." on the cover, the ends being open, in which case the postage will only be 1c. per 4 ounces. 5. Non-subscribers should not expect their communications to be noticed. 6. No questions will be answered except those pertaining purely to agriculture or agricultural matters.

Voluntary correspondence containing useful and seasonable information solicited, and if suitable, will be liberally paid for. No notice taken of anonymous correspondence. We do not return rejected communications.

Correspondents wanting reliable information relating to diseases of stock must not only give the symptoms as fully as possible, but also how the animal has been fed and otherwise treated or managed. In case of suspicion of hereditary diseases, it is necessary also to state whether or not the ancestors of the affected animal have had the disease or any predisposition to it.

In asking questions relating to manures, it is necessary to describe the nature of the soil on which the intended manures are to be applied; also the nature of the crop.

We do not hold ourselves responsible for the views of correspondents.

SIR,—Being an old subscriber, I thought that you would do me a kindness by letting me know if there can be any cure for the string halt, as I have a nice young horse, three years old, which got a touch of the string halt about six weeks ago, and is getting no better. About six weeks ago he got either sprained in the back or inflammation in the kidneys, but he got entirely well of that. Is it your opinion that he will outgrow it, as I don't work him?

ENNISKILLEN, ONT. H. S.

[String halt is incurable; but the complaint may be spasm of the muscles (and not string halt, which is a nervous disease), in which case the animal may get well. Turn him out to pasture, apply warm water fomentations, and rub some stimulating liniment inside of the thigh and leg once a day. Also give night and morning for a week, 1 drachm nitrate of potash, and 1 drachm pulverized nux vomica in bran mash.]

SIR,—I have a colt four days old. When foaled it was weak at the fetlocks on front legs. It knocked the skin, or at least the hair off the knuckle joint, by walking around on the joints. Will that be a permanent callus, or will the hair grow again without something applied, and what will do, if required? J. E. G.

DUTTON.

[Apply an astringent wash of alum or oak bark on the part. If the foal continues to knuckle over, take a stiff piece of leather cut to fit around the leg from the fetlock to near the knee, and lace it behind, not making it tight enough to stop the circulation of the blood. Then take a splint or piece of stiff wood and tack it on the leather along its whole length, putting a pad between the leather and the leg so as to prevent chafing. The hair will grow all right.]

SIR,—Can any of your readers advise me of a manure that will counteract alkali such as is found in Manitoba? How would sulphate of ammonia do? The land is, according to "parlance" of Canadians here, termed "cold." The land I allude to is low lying, easily worked, and level as a billiard table.

MELITA, Manitoba. R. S. G.

[Sulphate of ammonia would neutralize the alkaline condition of your land, but it would be very wasteful and expensive, for the ammonia, the most valuable and expensive part of the mixture, would be liberated in the form of gas. Your object is to make your soil neutral; that is, being too alkaline, it will require the application of an acid to neutralize it, which means that the soil will become neither acid nor alkaline, this being the proper condition of all soils. In your alkali lands there are potash and soda deposits, and it will therefore be interesting for you to know the affinity which sulphuric acid has for the different alkalies, so that you may be guided by the quantities to be used. Taking 1000 as a standard, the affinity of sulphuric acid for potash is 894; for soda, 885; for ammonia, 808; for lime, 868. You will now see that if the alkali of your soil consists largely or wholly of potash, it will require less acid to neutralize it than if composed largely or entirely of soda, and so on with the other alkalies named. The cheapest form in which sulphuric acid can be obtained is sulphate of lime, commonly known as gypsum or land plaster. It contains 30 to 50 per cent. of sulphuric acid, the balance being lime and water. The acid will unite with the potash, forming sulphate of potash, and with the soda, forming sulphate of soda. Of course it is impossible for us to say what quantities should be applied without knowing the percentage and nature of the alkali in your soil. However, you may examine your soil in dry weather, and if you observe a small quantity of alkali crust on the surface, you may apply 500 to 800 lbs. per acre; but if the deposits are distinctly visible, you may apply 1000 to 1500 lbs. per acre. We explain this matter in detail as it is of great importance to the settlers on your alkali plains. The vital question is, Will it pay, at the present price of your land, to apply sulphuric acid or plaster? Some agents are booming up these alkali lands, and have reported large yields. We should like to see this corroborated by the evidence of practical farmers. We hope, therefore, that you will write to us stating your experience on these lands with regard to their productive capacity and the products which they are adapted to raise. You would also confer a great favor on us and our numerous readers by experimenting with regard to the effects of gypsum on your soil, and reporting the results to us, keeping also an account of the cost, and of the yield compared with that of plots on which no gypsum has been applied. In any case you will require these experiments for your own benefit.]

SIR,—Your opinion on the following questions will be thankfully received:—1. Has blue stone any injurious effect on wheat, or any kind of grain, so as to run it out if used two or three years in succession? Some farmers around here say it makes the grain ripen too quick, and therefore runs it out. 2. I had two sows that had 21 pigs, and all I could save was 8; you could hear them breathe clear across the pen, and they died in two or three days: they were all right on their legs. Can you tell me what is the matter with them? Would too close breeding have the effect? They have been bred so a good deal. 3. I lost a valuable cow the other day; she had a hard time calving, but seemed all right for two or three days, and was taken sick all at once; she would not eat, but would lie down nearly all the time, and try to get on her back as much as she could. I had a veterinary surgeon out to see her; he thought there was not much wrong with her; she died that night. I opened her the next morning and found the compartment of the intestines full of bloody matter—two or three pail fulls; the web that covers the large stomach was very black, and the stomach itself was all bloodshot. What was the matter, and could there have been any help for her? How did the matter get there?

ROUNTHWAITE. J. E. R.

[1. If used in moderate quantities, blue stone will not injure the staying properties of grain. Read our article on "Rust and Smut." 2. We have often seen this condition produced by too high feeding, especially on fatty foods, too little exercise, and too much confinement in close quarters. Close breeding, if carried to great excess, may in some instances weaken the constitution, making it more liable to disease, but it would not produce any special symptoms. 3. In calving she strained too much and burst a blood vessel, and died from inflammation of the bowels, which caused the blackness on the lining of the stomach. The watery matter was the serum of the blood, which formed when the blood coagulated. You could not have helped her unless you had caught her straining and had assisted her in calving. Even then assistance may be of no avail, if the calf is wrongly presented.]

SIR.—1. Will you kindly tell me the reason of the following in your next issue? I have 4 cows; the milk from 2 is very frothy, and so is the cream, when set, and thin; and the milk from the other 2 is not in the least frothy, and the cream is beautiful and rich; they all feed together. 2. Will you also tell me how to keep butter, made now, till the fall or winter?

WINNIPEG. L. D.

[1. From the information you give we cannot state whether the frothiness is a natural or an unnatural condition. There is a great difference in the breeds, as well as in the feeding and management, in this respect; also in individuals of the same breed. Try a change of food There may be nothing the matter with the cows. 2. There are several good plans for preserving butter, depending upon the quantity and quality and the tastes of the customers. The simplest, cleanest, and neatest way is to make it into pound rolls, or larger for large customers, wrapping them neatly in clean muslin cloths; then take any convenient vessel and partly fill it with brine, into which the rolls are immersed, putting on a weight to keep them from floating. The rolls may be taken out and consumed or marketed whenever required. Another plan is to wash the butter thoroughly (in clean water or brine) while it is in the granular state, then placing the small particles of butter into muslin sacks, and keeping them immersed in brine, as before. But if the highest quality of butter is desired, and is required to be kept for a considerable time, then the granular butter may be preserved in fruit jars or other air-tight vessels, first filling them with brine, taking precaution that the vessels are full of the fluid so that all the air will escape. The jars are then sealed tight. It need never be feared that the brine is too strong; for none of it will be absorbed by the butter. In all cases the vessels should be kept in a cool place.]

SIR,—The question of fruit tree planting is a serious one to the farmer, and cannot be too profoundly considered. Apart from the partial non-success which follows the efforts of every one in planting fruit trees from a variety of causes, there is the aggravating result which is only discovered after years of care of trees which have thriven, to find that they are not true to name. Thousands of dollars have been worst than wasted on poor, common stock, purchased from rascally tree pedlars. A few years ago an agent representing an American nursery canvassed this section of country, exhibiting his volume of beautifully got-up engravings. Gorgeous strawberries, brobdignagian pears and peaches, mammoth apples, impossible grapes, and other tremendous demonstrations of Yankee ingenuity and skill, were depicted in grand style. The fellow did a large business, and when delivery time came he was informed by the Company, at headquarters, that many orders could not be filled. The enterprising agent was not daunted at this, but went to a nursery in Paris and bought up several hundred trees—name and quality counted for nothing—he labelled them on the spot to suit his orders, and our farmers received their trees in due time, and paid more than treble what they could have bought them for from a man on whom they could rely, and who would have named them honestly and correctly. The moral is that no one should purchase fruit trees from people of whose character they know nothing.

PARIS, Ont. CANADIAN.

[There are far too many unprincipled agents allowed to travel. The principles of some firms, although doing a large business, are not so honorable as they might be; but all the dishonor should not be laid to the charge of the Americans, as some of our Canadian nurserymen and their agents are equally unscrupulous.]

SIR,—1. I wish to seed with orchard grass and alsike clover. Should I sow the orchard grass in the fall, and harrow it in with the wheat; then sow the clover in the spring and harrow it without injuring the orchard grass? 2. Can I sow lucerne with fall wheat in the same way as other clovers? 3. Will it do to plant pears in with apples to be cultivated, or should they be planted separately?

LUTON P. O., Ont. A. S.

[1. Orchard grass is strong rooted, and, if sown with the fall wheat, may be safely harrowed in the spring with the alsike, providing the soil is not very light and the harrow not very heavy. 2. More depends upon the soil and season than upon time and manner of sowing. Lucerne has strong vitality and may be sown in spring or fall with good chance of success; but when clovers are sown by themselves they are usually sown in spring. 3. All depends upon the location and the varieties. If a saving of space is your object, it will not do to plant trees which may be set 15 or 20 feet apart with others which should be set 35 or 40 feet apart, as you could not get them in rows. You must judge this by a knowledge of the growing habits of the varieties which you desire to purchase. If your orchard land slopes say to the south, then the larger growing and hardier varieties should be placed on the high elevation so as to protect the weaker. Orchards in an exposed position should be sheltered on the north and west by wind-breaks of trees adapted to the soil, in which case the pear trees, or any tender varieties of apples should be set along the sides of the breaks so as to be most benefited by their protection. Another objection to planting apple and pear trees together is that the latter require a stiff clay soil, while the former do best in a loam. Peaches may be planted between the rows of a young apple orchard, as they will die out by the time the apple trees begin to bear.]

SIR,—I would like to ask your opinion about ensilage. Do you think it would pay me to build a silo? Does it make wholesome milk? A. M.

CLINTON, Ont.

[The silo business is attended with considerable risk, as the ensilage in some cases may be tolerably fit for food f fed in small quantities, while in others it is unfit for use. No perfect mode of perservation has yet been discovered. It is a "boom" which we would advise you to avoide at present. It injuriously affects the milk. Read our articles on Ensilage, pages 200 and 204.]

The Household.

Home Influence in the Training of Children.

BY L. N. REED.

I shall make no pretence of showing you or trying to show you, any model way of training children; but will give you some of my thoughts on the subject.

Solomon has told us to train up a child in the way he should go, and when he is old he will not depart from it. But just what that way is he has failed to make plain to us. And we do know there are children trained in the way they ought to go, and when they are old they have departed from it. He speaks also of sparing the rod and spoiling the child. Now I believe there are more children spoiled by the frequent, or daily use of the rod, than were ever from the sparing of it.

The use of the rod might have been justifiable in Solomon's case, for if he had children according to the number of wives—which were seven hundred—he must have felt obliged to use harsh measures to keep them in subjection. When we come to realize fully this just law of nature and of God, of visiting the iniquities of the fathers upon the children, we shall comprehend more clearly our relation to them, and feel a greater responsibility in training our children in a proper way than most of us do now. We shall not then use modes and means that will cause a predominance of the selfish and animal propensities, but will hasten with unceasing care to cultivate their moral and intellectual development; knowing that if we instill into their minds a love of all that is good and pure, intellectual and refined, the germ has been planted that will develop into the noblest type of manhood and womanhood this earth can produce.

The question now is: How shall we, in our hnmble way, and limited circumstances, find means for the qualification of this higher development, this culture and refinement for which we have so much need? I would say, first, by every means at our command we should try to perfect those virtues and traits of character in ourselves which we would like to have developed in our children; knowing, by the immutable laws of nature from which there is no escape, that if we indulge ourselves in the use of vulgar language aud brutal passions, or any of the low vices of the age, letting the animal gain ascendancy over higher faculties in our natures, the sin will be visited upon our children, and upon our children's children, even to the third and fourth generation.

There are many ways of training children in the way of the good and the beautiful, the educated and refined, that are inexpensive and within the means of all. We can teach them honesty and truthfulness; a reverence for old age, and a sympathy for the infirm and afflicted of body and mind; habits of industry and frugality, respect for their parents, and a respect for themselves that will prevent them from indulging in any of the vices and dissipations that allure so many of our young men and women to swift destruction. We can teach them refinement, by surrounding them with objects and influences that will act as educators in that direction. In no way can this influence be brought to bear upon them more directly, than in an atmosphere of refinement invading our homes. This atmosphere should not be confined to the interior of our homes, but the surroundings should be made to show clearly to every stranger who passes the door, if true refinement dwells within.

And in nearly every instance the opinion formed from surroundings of houses, in regard to the interior, will be a correct one. I say in nearly every instance, because in some cases it would not be correct. The wife and daughters may possess ever so fine a taste and love for beautiful trees, shrubs and flowers, when they cannot have it gratified without aid from the husband and sons. And if the preparation of the ground is left to a woman, and that woman an over-tasked farmer's wife, there will quite likely be no large display of flowers; for it is nearly impossible for a farmer's wife, with a family and dairy on her hands, to cultivate a flower garden, or have any great variety of flowers, even though she have the strength, and ever so great a love for them.

But a certain amount of good taste ought to be displayed in the home where we expect to train up our children. If we can't have a flower garden we can plant a rose bush in a jar, and set it in our window; and if we have not the fairest flowers of the garden from which to fill our vases—though we should not have even the vases—we can send the children to cull the violets and clover blossoms and place them on our tables in cracked tumblers. If we cannot afford oil paintings, or chromos framed in rosewood or gilt, we can take steel engravings and set them in home-made frames of cone or leather; or take wood cuts and encircle them with a wreath of autumn leaves or evergreen, and place them on our walls as educators of taste and beauty.

Every farm-house should have a well-filled library of interesting and instructive books, and a bountiful supply of newspaper and magazine literature, so that our children, though somewhat isolated in country homes, may yet gain access to, and hold converse with, the greatest minds the world has ever known. I am inclined to believe that the reading furnished by parents for their children, exerts a greater influence in the formation of their characters, than all other influences combined. And I am strengthened in this belief when I read the biographies of some of our most noted men and women whose whole education was gained almost entirely by reading books selected from public and private libraries, and newspapers and magazines furnished them at home.

All that is necessary to keep flowers fresh, says the Budget, is to keep them moist and cool. Instead of dipping flowers in water, they should simply be wrapped up in a wet newspaper, which will keep them fresher over night. A wet towel or napkin is too heavy, and will crush the blooms too much; besides it would allow the moisture to evaporate too easily. Boston florists pack rosebuds in wet paper, and send them as far west as Chicago, or even St. Louis, where they are taken out even fresher than when they came off the bush.

A young man sent twelve stamps to an advertiser to learn "how to make money fast," and was advised in reply to glue a five dollar bill to the bottom of his trunk.

In Summer, Remember

1. That infectious diseases generally are due to filth in some form—most of them directly to divers kinds of mioroscopio plants (bacteria), which gain entrance into the system through the lungs or the stomach. Invading the wonderful laboratories of life,—the infinitesimal cells,—they disorganize these just as the yeast-plants, multiplying to countless millions, disorganize every particle of the dough—or would do so, it not themselves killed by the heat of the oven.

2. Remember that the best preservative against them is high health, which either digests them in the stomach, or repels them from gaining a foothold, and eliminates them from the system.

3. Remember that the next best preservative against infectious diseases is a free and strong circulation of pure air through the house from cellar to attic. The danger is when large numbers of bacteria gain admittance. There is slight probability that a foothold will be gained by these invaders when their numbers are small.

4. Remember that in our cities and large towns the sewers, constantly receiving the excreta of the sick, are never free from infectious bacteria; that these readily pass up into dwellings through every open connecting pipe; and that these pipes should be kept closed when not in use; and that they should, in no case, enter a sleeping room, but only into a well-ventilated water-closet.

5. Remember that, in the country, wells are dangerous when they are within one hundred feet of a privy or cesspool.

6. Remember that while boiling may purify infected water, mere filtering never renders it safe.

7. That all water-closets, cesspools, etc. should be frequently disinfected, copperas (sulphate of iron) being a good and cheap disinfectant for the purpose.

8. That a deodorizer is not necessarily a disinfectant. We may kill a bad smell, and not kill the bacteria.

No Home.

There are thousands who know nothing of the blessed influences of a comfortable home, merely from the want of thrift or from dissipated habits. Youth was spent in frivolous amusements and demoralizing associations, leaving them at middle age, when the intellectual and the physical man should be in his greatest vigor, enervated and without one laudable ambition. Friends long since lost, confidence gone, and nothing to look to in old age but a mere toleration in the community where they should be ornaments. No home to fly to when wearied with the struggles incident to life, no wife to cheer them in their despondency, no children to amuse them, and no virtuous household to give zest to the joys of life. All is blank, and there is no hope or succor except that which is given out by the hands of public or private charities.

When the family of an industrious and sober citizen gather around a cheerful fire of a wintry day, the homeless man is seeking shelter in the station-house, or begging for a night's rest in the outbuilding of one who started in life at the same time, with no greater advantages; but honesty and industry built up that house, while dissipation destroyed the other.

Family Circle.

EPISODE IN THE LIFE OF MISS TABITHA TRENOODLE.

It is a very fine thing doubtless to have a man to protect one; but then it doesn't always turn out so satisfactory as one expected. There was my friend Mrs. Squeamish, a widow with a pension and no children. She said to me once, "O, I wouldn't go to a theatre without a gentleman for all the world!" Soon after this she went to a certain little country theatre with a gentleman who got "screwed," and made a disgrace of himself in the boxes, and was carried out over the heads of the people, crying out "Shame! shame!" Poor Mrs. Squeamish fainted, and came to just as twenty voices were shouting, "She's drunk, too,—dead drunk! Bundle her out!" Upon which she fainted again, and was "bundled out" with ignominy, and her dress quite spoilt, besides her chignon pulled down and left behind on the seat. Then the pit got it, and stuck it on a stick, and went round asking the boxes would they buy it, or own it. Mrs. Squeamish left. She has never been seen in that town since.

Such an accident would not have driven *me* away, although I don't pretend to belong to the strong-minded lot either. As to the circumstance of her being a widow and my being single, I don't see at all how that can make the case different. The fact is, I've gone through a worse adventure than Mrs. Squeamish's, and faced it out boldly; the difference in our characters led to her running away and my standing my ground—that's about the truth of it. Getting married is all nonsense: it no more alters a woman's brain than it does a man's beard. I have seen plenty of my friends get married, and never perceived that they could reason or chop logic—whatever condiment that may be, or why always chopped, I can't say—with more success than in their maiden days. If I were to marry to-morrow, I feel certain of this—I shouldn't be able to understand Euclid one atom more than I do now, I should still look upon it—somebody says I ought to say *him*; but that's absurd—as a book full of ridiculous puzzles, scratchy drawings like the Freemasons' arms without the compass, and capital letters stuck upways, and downways, and sideways, and any way except straight on like a Christian alphabet. And how any man can study all that without being addle-headed is beyond me to tell. For my part I never look at a page or two without feeling as though I was gone crazy, chasing a lot of runaway letters, all bumping over one another; and all swearing A was B, and B was C, and D was nothing in particular. That's how I feel; and if Euclid really was a man, I can only suppose he was some poor slave or savage, who tatooed himself with the alphabet, because he couldn't learn it any other way, and then he was made a Freemason of, and tatooed himself with that too. After saying which, I hope I've proved satisfactorily that my being single was not the cause of my following the course diametrically (I got that from Euclid) opposed to the conduct of Mrs. Squeamish. If my arguments don't convince folks, it will be because they are a set of know-nothings, with no brains worth convincing. At all events I've convinced myself, and that's enough.

After which, here's my adventure in black and white—which is a very different thing to mud and water, and that's how it came to me.

I live out of the world, down in Cornwall; but my house is in a cheerful spot, the sea is on one side of it, and the English Channel is on the other; and behind is an old mine, with a good many worked out shafts. These being stuck about the pathways make an evening walk rather exciting; and I generally take with me a large umbrella *spread* and a speaking-trumpet; the first to break my fall, and the second to make my position known to my neighbours. I am not without neighbours: there's a lighthouse on the sea side, which can be reached in fine weather; and on the Channel side there's an island with a coastguard station on it, whereon reside three men and a boy. They pass their time cheerfully in taking sights at the ships going up and down Channel punching the boy,—who seems to do all the washing and cooking, as far as I can make out with my telescope,—and in fishing for conger-eels. At first government placed a woman with them as housekeeper; but after a week's trial, they put this female into an open boat, and sent her adrift. When the monthly provision-boat came to them, they very properly mentioned what they had done, adding they should all have died if they had kept her on the island, as she tyrannised over them to that exent that they never knew what to eat, drink, think, or avoid, much less sleep. "In fact," said the eldest man of the party, "that woman had neither sense, shape, recollection, nor smell. I ain't seen her since we sent her packing;—have you, comrade?"

The men in the shore-boat, with a wicked twinkle in the eye, said they hadn't seen her either.

As far as I can learn, no one has seen her since; at all events, she hasn't been heard of up to this time. Perhaps she is at the Scilly Isles; or she may have drifted up to London. If any gentleman in chambers knows a tyrannical female without sense, shape, recollection, or smell, may be he'll have the kindness to send me information of the fact through the editor. My kindly neighbours on the island will, I am sure, be glad to hear of it. They are too good-natured to owe the woman a grudge.

My other neighbours are a few fishermen and their families—capital people!—and the parson and his wife. The wife, however, is a howling maniac—through loneliness, he says, which is nonsense. You perceive, therefore, I am very agreeably placed with regard to locality and neighbours, so there is no necessity for me to go gadding about for a change. However, when a cousin asked me into Devonshire for a week, I resolved to oblige her, since she was so very pressing.

I started in a kittereen (a covered cart or van), and after a goodish drive reached the rail, by which I made my way to Saltash—a little town where the women row about in boats stronger than men, and the streets are so steep you want to run down by yourself, like a wheelbarrow; or if you are going up, you feel like a pole with a leg of mutton atop, or ought to be, which I needn't say it isn't. And the Royal Albert Bridge is there, which nobody ever calls Albert, leave alone Royal, but simple Saltash Bridge—and quite enough too, I think.

My cousin lives up a little creek—lakes they are called here—on the Devonshire side of the Tamar, and of course I thought the right way to get to it was to walk across the bridge. But, bless you, no! The very first step I take a man starts up and says, "Ma'am, you can't go this way."

"What! isn't a bridge made to be walked over?" I asked.

"This bridge isn't, ma'am; it's made only for the trains."

"That's a mighty sensible arrangement, young man," I answered, as provoked as an owl in daylight. "Here's a bridge joining two counties, and a side-walk no consequence to directors, with company's money like dirt. And yet respectable people are to drown or stay in Cornwall for ever. Dear me!" I said, working myself up a bit, "anyone would think a Cornishman was to have his head cut off if he went into Devonshire, just as he had in King Egbert's days."

"Not at all, ma'am," says the man, quite civil. "You might have passed over in the train as safe as the Queen herself."

"I must have gone to Devonport, then," I answered, cooling down, "and that would be six miles out of my way. I'm going to Tavytree."

"There's no conveyance to be had here, ma'am; you had better have gone to Devonport and taken a fly."

"Tavytree is only two miles from this; I can walk that distance and save my shillings. Only I must cross the river first," I said, as sweet as I could speak. "I'm sure you'll have no objection to let me over the bridge. You don't wish to see a lady drown herself, I suppose."

"I hope not, ma'am. But as for the bridge, ma'am it's unpossible, and more'n my place is worth. A boat will take you over for a shilling; or if you wait for the steam ferry-boat, which crosses every half-hour, you can go by that for a penny. It's because of the ferry, ma'am, we are bound to let no passengers cross the bridge. Special clause in the Act, ma'am, to protect the interests of ferry people."

"Since that is the case!" said I, highly indignant, "that ferry shall never see a penny of mine as long as there's a bucketful of sea around the Land's End."

Upon which, wishing the young man good evening, I walked down to the river's edge and called for a boat. "It's very muddy walking in the lanes after you've crossed, ma'am," said the boatman, "leave alone its being very lonesome for hunprotected lady. I'll take you right up to Tavytree quay for eighteen pence, ma'am, and nothing to fear with a man with you all the way, ma'am."

"Ah, well!" I thought to myself, "there's nothing like having a man with one, after all. I'll close with this proposition."

We started immediately. I was quite calm and tranquil, having a man with me; and I must say; while we kept to the Tamar, we had a beautiful time. The water was smooth as crystal; and though the night was dark, yet since there was nothing to be afraid of—no steamers bursting about, or lazy barges rolling along like porpoises in liquor—dark or light mattered little. But when we turned into Tavytree lake, this being much narrower than the Tamar, and the banks very high and wooded, I certainly did wish the days were a bit longer,—or even a lantern would have been cheerful.

"Tavytree lake has got a very cranky channel," I said to the man. "I suppose you know it pretty well?"

"All right, ma'am," says the man. And he rowed on without another word.

"Don't fidget," is my motto. If you are under a man's care, leave him alone; don't pull the reins out of his hands, and pretend you can drive better than he, because the chances are you can't. Acting up to my motto, I did not suppose that I could row, or understand the tide better than the boatman. It was darker than I liked; but he said nothing, and I said nothing, till at last the boat bumbed a bit and then stopped.

"Why don't you go on?" I said very civilly.

"We are stuck, ma'am."

"Stuck!"

"In the mud, ma'am; and the tide is running down very fast."

"If it is running fast it may take the boat with it," I remarked.

"More likely to leave her high and dry, ma'am; leastways, unless I can push her off."

"Then push her off, by all means."

Having a man with me, of course I did not feel in the least alarmed, but I was certainly a little shocked when he divested himself of shoes and stockings right before my eyes, then clambered over the side of the boat and disappeared bodily. I screamed.

"No harm done, ma'am; the water is rather deep this side, that's all. I'll find the channel, and get this boat in it in a jiffy."

Off he went, taking soundings on his way with a pole.

It was so dark by this time, that he had not taken three steps before he became invisible. At first I heard a good deal of floundering, but at last that died away in the distance, and all was quiet. Fifteen minutes went by, and the boat got rather one-sided, with a queer inclination to tip over. Still I was placid; nothing can go wrong when an unprotected female has a man to take care of her. Nevertheless, when half an hour slipped on, and there was not a sound to break the stillness, and no signs of the man, I grew nervous.

"It may be pleasant to have a man with one, but I don't know that it's pleasant to have a drowned man," I said to myself; "especially if this drowned man goes 'bobbing around' all night while I sit in his boat. Of course I must sit here all night if he dosen't return. And in the morning, when his corpse goes floating by, I shall have to catch it and tie a string to it, and tow it home to his wife. That's horrid enough; but how do I know that I shan't be accused of killing him? Who is to prove that I didn't? I can't be a witness for myself. I know exactly how the newspapers will put the case: A weak man, lame of one foot, is seen to depart in the darkness, with a muscular and bony female'—I am bony, I don't deny it'—and this man is never seen again alive. But in the morning the audacious murderess returns to Saltash, towing the body of her victim, attached by her scarf and pocket handkerchief to the boat, and tells the incredible tale that the man has drowned himself. Her story is that he deliberately flung himself from the boat, and went *on foot* through the river; and she affirms she never saw him again, till his dead face bobbed up before her eyes at six this morning. We leave this incredible statement to the comments of our readers. For ourselves, we assert that no man would quit a boat to *walk up* a river, and no lady, worthy of the name, would remain in an open boat all night. No! this female ruffian has murdered that poor, lame, harmless man; and in the name of Man we demand justice!"

This was the sort of paragraph that would appear, and I felt myself get damp as I thought of it.

At this instant a faint voice reached me, gradually developing into frantic cries of—

"Hoy! hoy! boat there!"

"Boat there!" I said to myself. "Of course the boat is here; and it's tipping more and more, too."

"Boat! Hoy, ma'am! Boat!"

It was impossible for me to condescend to make any reply to this nonsense. But the cries only grew more frantic from my silence.

"Boat! hoy! Holler, ma'am! holler!"

"Hollow!" I observed. "It's my private opinion the boat won't be hollow much longer, for if she tips a little more she'll fill."

"Holler, ma'am! I can't see nothing! I can't find the boat! Holler for marcy's sake!"

O, I understand the matter now! The poor man had lost the boat in the darkness, and had been floundering up and down the river all this time in search of it. Of course I "hollered" immediately, only I didn't quite know how to do it.

"Ah! Ah! Ah! O!" I said very genteelly.

"Holler, ma'am! holler! I'm getting the cramps!"

Upon this I stood up—the boat tipped dreadfully—and cried out, more genteelly, "O! O! O! Ah!"

"Boat there! I'm most done. Holler! or can't you show something white?"

Good heavens! show something white! Was the horrid man mad? Ah, I would wave my handkerchief.

This was getting exciting and romantic. I would do a noble deed; I would wave my handkerchief, and save the man's life.

I waved it.

A great splash—a floundering—a gasp—a bubbling—then a choked voice, desperate,

"Boat! boat! Holler;—for life's sake, holler!"

I dropped my handkerchief, I dropped my gentility, and I "hollered," ay, and like a boatswain, too.

I did more. I showed something white. The man's life was at stake, and mine—for if he drowned I should hang. My petticoat was of dimity, ironed and starched that morning; it glistened, it gleamed like a beacon; the drowning man saw it—he had not the slightest idea in the world what it was—and made for the boat. When he reached it, gasping and trembling, I was a modest mass of dark drapery—not a ray of white about me. And he positively was not grateful; but then I confess he asked no questions. Thus do woman's noblest sacrifices ever remain unseen, unappreciated by man.

Unconscious of my devoted act, this man sat down, wet as a shag, and blowing like a porpoise, not uttering a word of thanks. His first sentence was even a reproach:

"Why didn't you holler before, ma'am? I've come near bein' drowned."

"My good man, I *did* holla," I answered with dignified calm. "Now why don't you get the boat off at once?"

"Because I can't, ma'am. And if I could, there's no water to float her higher up."

"The fact is, you don't know the channel," said I severely."

"Couldn't find it in the dark, ma'am. And if I could, one man's strength wouldn't shove the boat into it off this mud."

"Then what's to be done?" I asked with a little scream, as the boat went right over on her side, nearly tilting me over into the man's lap.

"We can't do nothing but sit here till five o'clock tomorrow morning; by that time I reckon the tide'll get her off."

"What! sit here in this stick-in-the-mud boat all night with you?" I shrieked—"that's impossible.'"

Good gracious, I thought, here's a position for an unprotected female! sitting up till five in the morning, in pitch darkness, up a lonely creek, with a boatman. O, this is nice, this is respectable!—this is having a man take care of one, this is! I had better have let the creature drown himself.

"If you won't sit here till high tide, what'll you do, ma'am?" asked the man.

"What will I do? I'll wade the river," I answered.

"You will, ma'am!" he cried. "Well, I must say you are a plucky one."

He bent forwards to me, and shook the wet of himself upon my tea-green silk. I held myself very stiff in order to let him see that I wanted no admiration.

"Now my good man," I said "let us start," at the same time I prepared myself to show boldly my white dimity, my scarlet stockings, and balmoral boots.

"La bless you, ma'am, you can't wade yet; you must wait an hour at least; the tide isn't low enough, you'd be drowned now."

"Very well, I'll wait an hour."

I said this with the composure of a martyr.

(Concluded next month.)

Minnie May's Department.

MY DEAR NIECES.—We are very much surprised and disappointed at the great decrease in the number of competitors in this very needful and excellent art, plain needlework. No doubt the season of the year, when some are taking their holidays, and others have extra farm duties to perform, had something to do with this, but we certainly did hope that the older girls would show as much, if not more, interest in this as in the fancy work and essay-writing competitions; but instead, there was not one sampler sent in competition for the first prize. Just think of it, my friends, are you willing to let your younger sisters carry off the palm in such a thing as hand sewing? Why this branch of industry is so much ignored by the present generation is a mystery to us.

In the second division (girls under fifteen years), the prize sampler by Miss Gertie Richardson, at the age of seven years and nine months, was remarkably well done, considering the years of the worker, and we hope that our little friend will be encouraged to persevere in this work until she attains that perfection which few reach or even attempt in this age—the chief faults in this division being that the button holes were generally unevenly cut and worked, and the hemming was not properly done, being over-seamed. Then the finishing off lacked care and attention; the ruffles should have been rolled and whipped and then sewed to the foundation, instead of leaving the rough edges.

As I have already said, the prize of $1.00 in cash has been awarded to Miss Gertie E. Richardson, of Batteau, Simcoe Co., Ont.

A prize of the "Buckeye Cook Book" will be given for the best directions for making catsup and pickles, the recipes to be the actual experiments of the sender, and not simply copies from cook books. All communications must be n by the 25th July. MINNIE MAY.

Work Basket.

ORNAMENTAL FIRE-PLACE.—In summer when the fire-place is not in use, it can be made exceedingly attractive by fitting in a piece of looking-glass, either with or without a frame, as a chimney-board. Then remove the fender and place in its stead a rustic one made of the knotty roots of trees which can be found in the woods, and varnished; inside this place a tin filled with pot plants in bloom; then curtains of either lace, cloth or velvet may be looped away at each side and finished at the top with a drape to correspond.

A decorative novelty consists of an ordinary school slate with a pretty painting upon it. The wooden frame is gilded or ebonised and a gilded slate pencil fastened to the top by a bow of bright ribbon. Very pretty table screens are also made by joining three slates together with small hinges, and then decorating.

A pretty tray rack is made by gilding an ordinary rolling pin and suspending it by ribbons tied on each handle and brought together at the center with a large bow. Six hooks are screwed into the middle of the pin, above which may be painted a spray of flowers. Japanese chintz is very popular for portiers between an alcove and bed-room.

CHEAP CURTAINS.—A very stylish and graceful design for sitting room or bedroom curtains recently originated in the New York art rooms, and full directions are given here for making a pair. The curtains are inexpensive, the full cost for two deep windows being about $3.50. The materials required are about two yards of cretonne, ten or twelve yards of cheese-cloth, and sufficient lace for finishing the front edges of the curtains and making an insertion across the top of each. Be careful in purchasing the cheese-cloth to get a piece which is evenly woven, and without black threads. Scrim may be used instead of cheese-cloth, if preferred, but it is more expensive. In buying the cretonne, get two patterns which harmonize, buying one yard of each. Cut each yard in four pieces, lengthwise. Each curtain has two of these pieces at the top, with an insertion of lace between. One curtain only will be described. Take one piece of each pattern of cretonne, stitch the lace insertion between them, turn down the edge about an inch of the one intended for the top of the curtain, and stitch the cheese-cloth on the other piece with a pudding-bag seam. Make a hem twelve inches deep on the bottom of the curtain. The lace for the curtain should be about four inches wide. Lay the lace flat on the right side of the curtain, an inch from the edge, with straight edge of the lace toward the selvedge, and the pointed edge turning backward. Stitch it on, fold down the hem on the wrong side, and catch it fast with the long stitches. Cut a V-shaped piece out of the lace at the lower corner of the curtain, seam the lace together and sew it across the bottom of the curtain.—[Ladies' Guide to Fancy Work.

LEAF EDGING IN KNITTING.—Cast on 18 stitches. 1.—Widen (which means thread over), knit 1, widen, knit 2, narrow twice, knit 2, widen, narrow, widen, narrow, knit 1. Every alternate row seam across, slipping first stitch.

3.—Widen, knit 3, widen, knit 1, narrow twice, knit 1, widen, narrow, widen, narrow, knit 1.

5.—Widen, knit 5, widen, narrow twice, widen, narrow, widen, narrow, knit 1.

7.—Widen, knit 3, narrow, knit 2, widen, narrow, widen, narrow, widen, narrow, knit 1.—[ANNIE B. STEPHEN, Trout River P. O., Que.

Answers to Enquirers.

A CONSTANT READER.—The superstitious belief that thirteen is an unlucky number to assemble at table is a very ancient one, and is said to have taken its origin from the Paschal Supper, as Judas Iscariot was the thirteenth guest.

MAY S. AND LENA are thanked for sending words of "My Heart's My Ain" for E. P.

SUSIE.—In order to have nice, thrifty geraniums that will bloom all winter, small plants should be started the last of June, and kept growing all summer, the pots sunk in the garden, the ends of the branches kept pinched to make them stalky, and not allowed to bloom. When taken into the house they like the sun and a cool temperature, from 60 to 65 degrees, and do better in a room away from a direct fire.

T. B.—Certainly.

MRS. JOSEPH M.—You can finish your crazy patch-work quilt around the edges with border of plush a finger and a half wide, and line the quilt with old gold, blue, red, or olive shades.

T. H.—Glass may be beautifully frosted with epsom salts dissolved in hot water, and applied with a brush while hot.

M. G. G.—The tradition of the eleven thousand virgins is as follows:—When Conan with eleven thousand warriors founded the kingdom of Annorica, or Brittany, in the fourth century, Dionatus, king of Cornwall, despatched Ursula, his daughter, with eleven thousand of the elite of the British virgins to be their wives. The fair adventurers being cast ashore by a tempest among the Picts, and declining their addresses, were all barbarously murdered.

C. A. W.—The "Salvation Army," as it is styled, was originated in London, in 1865, by a minister who held open-air meetings and large public gatherings for the purpose of converting those who attended no place of worship. They first made their appearance in this country March 10, 1880, when eight members of the "army" arrived in New York city among the immigrants from London.

Queries.

Can any of our readers inform Lena Will whether our wild flowers have been cultivated to advantage?

Recipes.

ROLLED BEEFSTEAK.—This is a very good way of cooking an inferior steak. Take a round steak and pound it, and spread with a dressing such as is used for poultry. Begin at one end and roll it up neatly, tieing to keep it in shape. Put in a bake-pan with a little water, and bake until the meat is tender, basting frequently. Thicken the gravy in the pan with a little flour wet with cold water; then season nicely, adding a little catsup. Cut the meat as you would a berry roll, slicing off the ends neatly.

HOW TO BOIL ASPARAGUS.—It should be cut off exactly equal lengths, and boiled standing ends upwards in a deep saucepan. Nearly two inches of the heads should be out of the water—the steam sufficing to cook them, as they form the tenderest part of the plant; while the hard, stalky part is rendered soft and succulent by the longer boiling which this plan permits. Instead of the orthodox twenty minutes allotted to asparagus, lying horizontally, which half-cooks the stalks and over-cooks the head, diminishing its flavor and consistence, a period of thirty or forty minutes on the plan recommended, will render fully a third more of the stalk delicious, while the head will be properly cooked by the steam alone.—[The Caterer.

BOILED LETTUCE.—This is a delicious vegetable, resembling asparagus or seakale, and yet not quite like either. Lettuces may be simply boiled and eaten like other greens, but they can be boiled and served as *entre-mets* in a variety of ways. Have ready some neatly-cut pieces

of toast, a pale-brown color; lay them on a dish, *a hot one;* let each piece be of a size to hold the lettuce and one poached egg; pour over the toast a little of the water and some good gravy; if the latter be not handy, a little fresh butter should be spread on the toast previous to pouring the water from the lettuce; place on each piece of toast enough of the boiled lettuce to form a flat layer; neatly trim the edges of the vegetable, and place a poached egg on the top; or, prepare some toast as above, and spread over each piece a thin layer of anchovy or bloated paste, on which lay the lettuce; then season to taste. To prepare the lettuces for boiling they should be well cleansed, and the top of the leaves, if they have the slightest appearance of fading, cut off; leave as much of the stalk as possible, cutting off the strong skin. The stalk is, when boiled, the most delicious part. The large cos lettuce makes the handsomest dish, but we prefer the flavor of the drumhead.

To Preserve Strawberries Whole.—To every pound of strawberries take three-quarters of a pound of sugar. Put the strawberries into a large platter and put half of the sugar over them, letting them stand over night. Next morning drain off the juice from the platter, add to it one quart of red currant juice, add the remainder of the sugar. Boil and skim this until no refuse scum rises, then drop in the strawberries (only enough at one time to cover the surface of the preserving kettle), and let them simmer for about eight minutes. Skim them out into jars, and scald the rest of the berries in the same way. Then boil up the syrup and pour it over the berries. The tart flavor of the currant juice is a great improvement to the preserved berries.—[Springfield Republican.

Strawberry Vinegar.—For this purpose select the freshest, fall-flavored fruit, and see that it is fully ripe. Hull the berries, place them in wide-mouthed glass jars, and pour over them the best white wine vinegar, allowing one quart for each pound of the berries. Then cover the jars tightly and let them stand for three days; then draw the vinegar off, refill the jars with fresh berries, and pour the vinegar back over them. When it has stood, as before, three days, repeat the process for the third time; then drain off the vinegar, straining it through a muslin bag. Now measure it, pour it into a sauce-pan, and for each pint of it add one pound of broken or crushed white sugar. Stir the sugar until nearly dissolved, and then sit the sauce-pan on the fire, where the contents may boil very gently for five minutes. Then pour the liquor into another vessel, and after standing ten minutes, skim it well, then it may be bottled and set away for use.

Molasses Cookies.—One pint of New Orleans molasses, one cup of sour cream, one-half cupful of shortening, one tablespoonful and a half of soda, yolks of three eggs.

Strawberry Water.—Take one quart of good ripe berries, hull them, and crush them in a bowl with a wooden spoon, mixing the pulps with a quarter of a pound of pulverized sugar and a half-pint of cold water. Pour the mixture into a fine sieve, rubbing it through and then filtering it. Then add the strained juice of a lemon and a pint and a half of cold water, and set it into the ice chest until wanted.

Oatmeal Crackers.—Mix oatmeal with warm water and a little sugar and salt; knead them thoroughly on the well-floured board, and roll, then cut in squares and bake till done; then dry them until crisp and rattling.

Comparatively few housekeepers, says Maria Parloa, in "Good Housekeeping," consider how slight an extra effort is required to give the family a great deal of additional comfort and happiness. Many feel that they are their neighbours' inferiors in administering domestic affairs, simply because they have failed, owing to absence of inclination, or lack of skill or means, to lead their tables with elaborate dishes. Let it be remembered that in the long run, a simple diet will bring better health and more happiness; yet let it also be remembered that a wise housekeeper will seek to lift herself from ruts in which she may unconsciously have fallen, and by making a little change here and there present such a variety of food as will render the table attractive at every meal.

To substitute new dishes for some with which the family have had an extended acquaintance does not necessitate great expense. Housekeepers frequently study and experiment with recipe after recipe for making cake without stopping to think that the same amount of thought, money and labour expended in the preparation of some simple, savory dish might afford much more satisfaction.

Ability to be a perfect housekeeper is not conferred on every woman, but it is possible to be a good one without sacrificing all other interests in life. While one is learning, to be sure, it may seem as if there were not many interests beyond the household, but after the art has been mastered there is a freedom and a sense of power worth all the struggles made. Of course the kitchen is not the only place in which burdens are borne, yet the care of the table generally makes itself felt more than anything else; and no matter how well conducted all the other departments may be, if this one be neglected, discomfort and unhappiness will ensue. Cooking is a science, and for this reason girls are often more successful than their elders in culinary experiments, because they comply strictly with directions instead of guessing what quantities of ingredients to use in order to produce desired results. Experienced housekeepers might avoid much disappointment if they were always equally careful.—[The Caterer.

The Lost Ring.—A curious instance of the discovery of a lost ring in a root of celery occurred some years back in Sweden. A lady when planting celery in the garden in spring, and whilst digging holes for the small plants with her fingers, unconsciously dropped the ring into one of the holes. A plant was duly inserted in the hole, and doubtless through the lost ring, and as the root grew the ring must have become imbedded in its substance. The ring had been given up for lost until the following winter, when the mystery was cleared up by the ring making its appearance in the soup at dinner, in a portion of the celery root.

A Cure for Nervous Headache.

The Physicians' and Surgeons' *Investigator* says a solution of the bi-sulphide of carbon is a specific for certain kinds of headache, particularly those of a nervous nature. A wide-mouth glass-stoppered bottle is half filled with cotton or a fine sponge, and upon this two or three drachms of the solution are poured. When occasion for its use occurs the mouth of the bottle is to be applied to the temple or as near as possible to the seat of the pain, so closely that none of the volatile vapor may escape, and retained there four or five minutes or longer. For a minute or so nothing is felt, then comes a sense of tingling, which in a few minutes—three or four usually—becomes rather severe; but which subsides almost immediately if the bottle be removed, and any redness of the skin that may occur will also quickly subside. It may be re-applied, if necessary, several times in the day, and it generally acts like magic, giving immediate relief.

Literal.

The native wit of even the untutored Hibernian is well illustrated by the following dialogue between a daughter of the Emerald Isl and her mistress:

Mistress—Bridget, I can't get into the parlor.

Bridget—Sure it's mesilf knows that, and yer won't, fur I have the kay in me pocket.

Mistress—Open the door immediately.

Bridget—Will yez go in if I do?

Mistress—Certainly, I will.

Bridget—Then yez don't get the kay.

Mistress—Open the door immediately! What do you mean?

Bridget—Sure, it's by your orders.

Mistress—My orders?

Bridget—Yis. Yez said yesterday, "Don't let me come down-stairs in the mornin' and see any dust on the parlor furniture." So I just puts the kay in me pocket, and says I, "Then she won't."

The cost of stamping articles that are to be embroidered is so great that many a woman gives up doing the pretty work her soul loves for that reason. The little patterns which can now be bought for a few cents a yard, or by the piece, and which, with one artistic stroke of the flat-iron, may be transferred perfectly and with clearness to any material, are a great boon. A lovely table spread was stamped in this way, the spread was cardinal or deep crimson felt; the pattern stamped upon it was of oak leaves and holly berries. This was embroidered with etching silk, and was very handsome and comparatively cheap. A pretty mantle lambrequin was worked in the same style, and was finished across the bottom with a narrow band of plush, and with small tassels.

Tomato salad is an agreeable entree, and goes well with almost any dinner, but particularly well with fried or roast meats. To half a dozen medium-sized tomatoes, with the skins removed and the tomatoes sliced, add the yolks of two hard-boiled eggs, also one raw egg, well beaten and mixed with a tablespoonful of butter, a teaspoonful of sugar, with cayenne pepper and salt to suit the taste. When all these are mixed thoroughly, add half of a small cupful of vinegar.

The Lender's "Last Straw."

BY ANNIE L. JACK.

It was a quiet, drowsy afternoon, and Grandma Longly sat on the doorstep of the tidy kitchen, too weary at the moment to do any more work. The midsummer day had been very warm, without a breeze, and a forenoon of making jam, with dinner getting for Ezra and the three hired men, who were sure to be on hand when twelve o'clock struck, had left her in a frame of mind, and weariness of body, not enviable, to say the least. She must begin the socks in a few minutes, there was such a heap, and then Asa Bilge's girl looked 'round the corner.

"Marm wants to get the lend of yer soap kettle."

"Take it, Sarah, it's out on the stones," she said good naturedly, and then reached for her basket of socks just as her favorite grandchild crossed the street and stood beside the doorpost.

"Grandma," he said plaintively, "I ain't got any twine to make a kite string; can you lend me a little of that ball I saw in your table drawer?"

"Yes, dearie, go and take some, only mind don't tangle it," The little fellow ran off in high glee, and her thoughts went back to the past, to the early years of her married life, when she used to think life would be easier after the children grew up. Now her sons had married and moved west. Ezra had bought a farm with the money she had helped him to save. Her only girl was married and lived opposite; heaven be thanked she stayed near her, but here, at sixty years old, she was working—always working—three meals a day, and a house to keep clean, and no chance of anything better now, though she used to think—

"Can you lend me Mister Longley's hay sieve?" said a gruff voice at her elbow, and leaving the mending basket she climbed rather stiffly into the loft of the granary, and searched for the fine sieve, to oblige neighbor Barnes. Then it was time to put on the tea kettle, and while doing so, Mrs. Tompkins came in to borrow a "pickle tea." She had no "idea" she was so near out of it when the girls went down to the provision store that morning. The tea was soon poured out of the cannister into a torn newspaper, and peace reigned once more. But before the kettle boiled, Mrs. Simmonds' twins came in, hand in hand.

"Please, ma'am, will you lend mother your biggest bread pan," said Myra. "Yes, the *biggest* bread pan," echoed Maggie. The children's innocent looks and pretty speech disarmed Grandma Longley's rising wrath, and she meekly sought the article in question, bestowing at the same time a molasses cookie and a smile upon each of the gentle borrowers. And just as they skipped out, pretty Hettie Janson opened the door. She had on a new dress of a gay pattern, a dark ground where roses gracefully meandered, a large silvered locket on a chain of the same was around her neck, and bangles shook on her arms. Grandma had just taken up the weekly rural paper, that always lay on the window sill beside the mending basket, and was busy putting on her glasses, as the new-comer proferred her request. A gleam, a flash passed through them.

"Want my paper, do you? Why, it cost me six dozen of Speckle's eggs to buy it for a year. If you'd sell that locket you could get half-a-dozen. I'm tired of people saying they can't afford to take a paper when they have new feathers on their hats. If it's true 'them that borrow sup sorrow,' there's a heap of it for supper in this village to-night." She smiled grimly at the poor pun, and held up the paper. "It's worn to a rag now—been to Tompkins', and they do have a sight of dirt on their hands."

Then Hetty broke in softly—"I didn't come to borrow, to read, only to get the name of the publisher; for Uncle Jan sent me a gold dollar, and I thought I would get a paper of my own with it."

Then Grandma Longley was struck with remorse, and folding up the paper as she handed it to the young girl, said, "I'm very sorry I said so much, Hetty, but your patience would give out too, if you had spent the whole of this hot afternoon, as I have, pestered with borrowers, one after another."

A Critical Moment.

Two easy chairs, a veranda wide,
A corner hid from the light inside;
Rare Roses around—
* * * * * *
And he holds her hand;
With perfumed zephyr her cheeks are fanned,
All honeyed words are the words she hears.
"Will he, to-night?" and she hopes and fears,
Then all is still, and old Time is fleet;
All that she hears is her own heart beat,
As the lights go out in the deserted halls,
Gently a head on a shoulder falls,
Gently an arm steals round a waist,
A lock and a ringlet are misplaced.
"He'll surely speak, oh, that little word!"
He willing soul with a thrill is stirred.
"Are you fond of codfish ball?" said he.
"I never attended one," said she.

"Advantages of Edgukashion."

The editor of a Boston newspaper received the following letter one day not long ago:—

"Deere Cir,

"I wright this for a naybor of mine hoo is afeerd he kan't wright an spell an punkshooate good enuff to address a editor! He is a good man but his edgukashunal advantagious has ben somewat limited? He wants to kno if there wood be enny sho for him to git a gob of work in yure town? he is a kapable an kompetent man, an can turn his hand to most enny thing in the way of days works,

"If you shud heer of ennything he kin to pleese rite to me an I will let him kno as I reed and rite letters for everbody most round heer as I am bout the only man with enny edgukashion to speak of.

"So no more from SIMON G. GALT.

"P. S.—Pleese ancer back."

Blackberry cordial is one of those home-made medicines that used to win renown for our grandmothers. This was considered a most excellent remedy for diseases of the summer. Cook half a bushel blackberries until the juice seems to be all extracted, then put the berries and juice into a flannel bag, squeeze and press all the juice out; put it in a preserving kettle. Make a little muslin bag in which to put the spices, one quarter of a pound of allspice, two ounces of cinnamon bark broken in bits, two grated or broken nutmegs, and two ounces of cloves are required. To one quart of juice allow one pound of sugar. Cook very slowly; let it become heated gradually, thon boil for from ten to fifteen minutes. After this has cooled, add the purest brandy you can buy in the proportion of one pint to three pints of juice. Put into bottles and seal. It is ready for use immediately, though age improves it.

The Four Truths.

There was once an old monk who was walking through a forest with a scholar by his side. The old man suddenly stopped and pointed to four plants that were close at hand. The first was just beginning to peep above the ground, the second had rooted itself pretty well into the earth, the third was a small shrub, while the fourth and last was a full-sized tree.

Then the monk said to his young companion: "Pull up the first."

The boy easily pulled it up with his fingers.

"Now pull up the second."

The youth obeyed, but not so easily.

"And the third."

The boy had to put forth all his strength and use both his arms before he succeeded in uprooting it.

"And now," said the master, "try your hand upon the fourth."

But lo! the trunk of the tall tree, grasped in the arms of the youth, scarcely shook its leaves, and the little fellow found it impossible to tear the roots from the earth. Then the wise old monk explained to his scholar the meaning of the four trials.

This, my son, is just what happens with our passions. When they are very young and weak one may, by a little watchfulness over self and the help of a little self-denial easily tear them up; but if we let them cast their roots deep down into our souls, then no human power can uproot them—the almighty hand of the Creator alone can pluck them out. For this reason, my child, watch well your first impulses."

A bad and wicked person seeks companionship with such. A good person seeks fellowship with the good. There is no better test of the character than companionship. It is an unfailing guide. Tell me who is my friend, and you have the index to myself.

Notes on Prettifying.

A beautiful tidy for the back of a large chair is made of a square piece of cloth about ten inches each way; on this is sewed patchwork of plush and velvet in the form of a wide-spread fan. The corners of the block are of black velvet, and on the top, drooping over the fan, is a spray from a moss-rose bush, in ribbon embroidery. The edge is finished with lace. This design is pretty for a block in a quilt or sofa-pillow.

A pretty way to fix a palm-leaf fan is to paint it. Mix some ultra-marine of Prussian blue with a little silver white paint, and make it quite thin with boiled linseed oil. Paint the fan on both sides, handle and all, with it. If you choose to decorate it, paint a poppy or some buds and stems on it; tie a blue ribbon around the handle and hang it in a convenient place. If you prefer to make it pink, use crimson or madder lake and white in the same way.

If Papa Were Only Ready.

BY P. P. BLISS.

I should like to die, said Willie, if my papa
could die too;
But he says he isn't ready, 'cause he has so
much to do;
And my little sister Nellie says that I must
surely die,
And that she and mamma—then she stopped,
because it made me cry.

But she told me, I remember, once, while sitting on her knee,
That the angels never weary watching over
her and me,
And that if we're good—and mamma told me
just the same before,
They will let us into heaven when they see us
at the door.

There I know I shall be happy, and shall always want to stay;
I shall love to hear the singing, I shall love
the endless day;
I shall love to be with Jesus, I shall love Him
more and more;
And I'll gather water-lilies for the angel at
the door.

There will be none but the holy, I shall know
no more of sin;
I shall see mamma and Nellie, for I know
they'll let them in,
But I'll have to tell the angel when I meet him
at the door.
That he must excuse my papa, 'cause he
could'nt leave the store.

Nellie says that very likely I shall soon be
called away;
If papa were only ready, I should like to go
to-day;
But if I should go before him to that world of
light and joy,
I guess he'd want to come to heaven to see his
little boy.

True Friendship Only in a True Heart.

There is, indeed, a great deal of ingratitude, and a great deal of injustice in the world, and yet love is a thing so discriminating, so free in its choice, so incapable of purchase, of bribe, or bondage, that I believe it is very rarely, if ever, permanently misplaced, of being *finally* withheld if really merited.

True affection as naturally flows towards the excellent aad amiable, and as naturally avoids the mean, the selfish, and ill-natured, as water escaping from the harsh and rugged rock rests not till it reposes in the flowery bosom of the valley. We do, indeed, sometimes see ill-judging people lavishing their admiration on persons of superficial virtue and great professions; but in the sequel even these will be compelled to own their error, and acknowledge the superior worth of the modest, unpretending, consistent, benevolent character. If I was about to make a choice of a particular friend among a number of persons, I should not be guided by their conduct or professions to me, but by their behaviour to their own families, and among their own friends. A person who sustains one relation well, will not fail in another. I should be quite sure that a dutiful, attentive daughter, a kind, disinterested, and self-denying sister would make a *good friend;* on the contrary, no attentions or professions to myself could induce me to believe that an individual who failed in these relations was capable of disinterested and faithful friendship. I should fully expect that as soon as the novelty of our intimacy wore off, the first time an interest or inconvenience happened to clash, I should experience the same want of kindness and generosity I had witnessed in the case of the others.—*Jane Taylor.*

A Cheap Bath Outfit.

As warm weather approaches the necessity of some arrangement for bathing becomes apparent. Nothing is more conducive to the health and comfort of laboring men in summer than a daily bath, and it is a matter of regret that there are so few conveniences for the purpose in most homes, especially those in the country. Farmers in particular need bathing facilities, and yet in most cases they are almost entirely destitute of them. For their benefit we will describe a little device of our own, which we have used for several years with great satisfaction, and can recommend to all who want a cheap, convenient and easily managed apparatus for sponge bathing in the bed-room.

The articles required are a piece of rubber cloth a yard and a quarter square; four slats, two inches wide and three feet long, notched at the ends so as to lock together in the form of a square, and a large sponge. The slats are placed on the floor and the oil cloth is spread over them,—there is no need of fastening it to the slats—forming a shallow, square vessel a yard wide. In this the bather stands and applies the water with a sponge from the basin or bowl on the stand placed conveniently near. There need be no danger of wetting the carpet, or soiling the furniture.

When the bath is finished, gather three corners of the rubber cloth in the left hand, take the fourth corner in the right in such a way as to form a spout when lifted and held over the slop-jar or bucket. The water is poured out in a moment, when the cloth should be spread over the back of a chair to dry and the slats unlocked and set away in a closet. This is much easier than to bring a tub up from the cellar and carry it back again, besides giving a much more roomy and satisfactory bath. The rubber cloth, however, may be used as a cape over the shoulders in a rain-storm, or as a protection for the knees in the buggy in stormy weather.

The whole cost of the rubber cloth, sponge and slats, is only about two dollars, and if carefully kept will last for years.—*Indiana Farmer.*

Rose Bugs.

It is said that Paris green applied to rose bushes and grape vines infested with rose bugs will kill the insects as surely as it does the potato bug, when used on potato plants. The application can be dry, mixed with flour, or land plaster, or in liquid form, mixed with water, and sprinkled on, in the same manner as for the potato bug.—[Vick's Magazine for June.

About the best way of solving the scrapbook question is to get a number of the long, flat boxes that spools of thread come in; into each of these put scraps relating to a certain subject, label the box in large, clear letters on the end, put these boxes on a shelf laid one upon another so that you can see at once what and where is the needed scrap. This is the simplest and best known plan, and is far more convenient than the scrap book proper, or the envelope, and the gain in time from its practice is wonderful.

Happy Home.

Puck tells us it is not always the costliest home that is the happiest. Now, take the Indian wigwam. It dosen't contain the luxuries of the bank-president's home. All the carpet is an odd robe or two; the luxurious arm-chair is the ground, and there is no bric-a-brac except a scalp or two. Yet the Indian is happy. There is not a shadow to dim the pure old-gold sunshine of his wild life. He sees the smoke curl softly upwards from under the kettle that contains his meal, and float away through the rustling of the pine.

This picture makes his happiness complete, as he lies on the ground smoking and watching his wife do all the work. It is no wonder the Indian likes home, because that is the place where he never has anything to do but sit around and sleep. When he comes in from the hunt he is never sent off to the village to have some cretonne matched, or told to sit and hold three or four hanks of yarn that are to be wound; he dosen't have to take care of the pappoose while his wife goes shopping; he dosen't have to stand on a barrel and build up the obstinate stovepipe, section by section, with the soot pouring down in his eyes. He isn't asked what every woman he met had on, and is consequently not blown up for not having noticed.

Think what a happy home the Indian has, when you come to consider that his wife doesn't wear silk dresses, or twenty-dollar bonnets, or care anything about the operas, or horses and carriages. Why, the squaw is perfect in a blouse and a pair of army trousers. The noble woman makes every sacrifice to render her husband happy. He never knows what it is to be kept awake half the night to be talked into making some frivolous and unnecessary purchase, or to learn that the squaw in the next wigwam possesses something that he does not. These are some of the things that tend to make the Indian's home happy.

Making Character.

Many people seem to forget that character grows, that it is not something to be put on ready-made with manhood or womanhood, but that, day by day, here a little and there a little, it grows with the growth and strengthens with the strength, until, good or bad, it becomes almost a coat of mail. Look at a man of business—prompt, reliable, conscientious, yet clear-headed and energetic. When do you suppose he developed all those admirable qualities? When he was a boy? Let us see the way in which a boy of ten gets up in the morning, works, plays, studies, and we will tell you just what kind of a man he will make. The boy that is late to breakfast, and late at school, stands a poor chance to be a prompt man. The boy who neglects his duties, be they ever so small, and then excuses himself by saying, "I forgot; I d'dn't think," will never be a reliable man. And the boy who finds pleasure in the sufferings of weaker things will never be a noble, generous, kindly man—a gentleman.

"Pashence iz a good thing for a man to hav,' says Josh Billings, "but when he has got so much uv it that he kan fish all day over the side uv a boat without eny bait on hiz hook, lazyness is what's the matter with him."

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES.—The long summer holidays are beginning, and in a very short time the entire school-going world will be enjoying the summer vacation. As it is every year, so now, this season will be the last of its kind to a whole army of boys and girls. When this vacation is ended, they will enter, not "the more serious business of life," for nothing in life is more serious than the manner in which schooldays are employed, but that permanent occupation for which their schooling has fitted or failed to fit them. Vacation is a time of rest. It need not be a time of idleness. There are scores of ways in which the young who attend school all the year can make the hot months not only health restoring, but profitable in a money point of view, if they wish. As a general rule, everyone needs a change once a year. To some the need is rest, and many of these latter cannot afford a rest. But to a very large proportion of people, all the benefits of a vacation come from a change of work, just as well as a cessation of work. Those who act wisely will be sure to find some way of obtaining recreation, though they can't go yachting along the coast, or lie idly on a mountain side, or travel a thousand miles through the country. In this, as in all other things, happiness, my dear nephews and nieces, is to be found in making the best of your opportunities.

UNCLE TOM.

Puzzles.

1—PUZZLE.

A friend of mine taking a trip through Western Canada visited the following towns and villages:

1—A gentle breeze.
2—A young girl and a hard substance.
3—Aged and a fortress.
4—Relations, a chariot and what we do every day.
5—A climbing plant.
6—Two taken together and a spring.
7—A deed and a preposition.

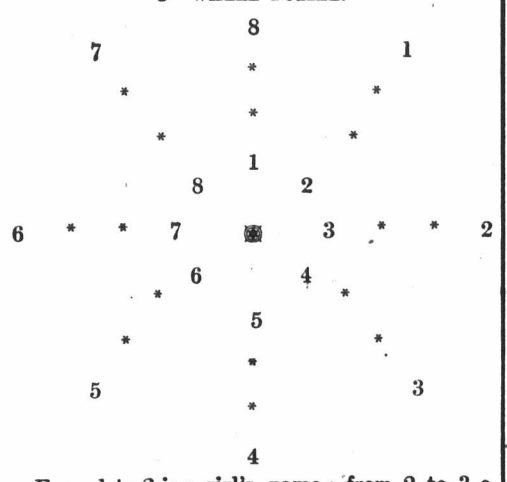
ADA ARMAND.

2—DIAMOND.

A consonant, a beverage, to begin, soothe, a statesman, a light, apt, a girl's name, a vowel.

WM. A. LAIDMAN.

3—WHEEL PUZZLE.



From 1 to 2 is a girl's name; from 2 to 3 a mite; from 3 to 4 a fairy; from 4 to 5 spoken; from 5 to 6 a roll; from 6 to 7 to resound; from 7 to 8 a token; from 8 to 1 a man's name.

Rim of wheel will name an Emperor; rim of hub a city in Canada.

ROBERT J. RISK.

4—CHANGED HEADINGS.

A dwelling = An animal.
To guard = Coin.
Earth = A union.
To turn over = To burn.
To gather = Chaste.

JANE L. MARTIN.

5—GEOGRAPHICAL HOUR GLASS.

A country in Asia; a town in Ontario; a city in the United States; cape off Newfoundland; a river in Scotland; a cape off Africa; a city in France; a sea in Europe; a county in South America.

ADA ARMAND.

6—NUMERICAL PUZZLE.

I am composed of 9 letters:
My 3, 6, 5, mean equal.
My 9, 1, 3, is juice.
My 5, 4, 7, 2 are worn out garments.
My 7, 1, 3, is an opening.
My 6, 2, 9, is an animal.
My 5, 7, 3, means to knock.
My whole is a kind of vegetable.

MAGGIE F. ELLIOTT.

7—ENIGMA.

My first is in glove but not in hand,
My second is in sea but not in land,
My third is in friend but not in foes,
My fourth is in bud but not in rose,
My fifth is in summer but not in fall,
My sixth is in narrow but not in tall,
My seventh is in arch but not in bower,
My whole is the name of a favorite flower.

HENRY REEVE.

8—ILLUSTRATED REBUS.

9—ANAGRAM.

Fi ew rewe tbu sa dyera ot kloo no teh tglhi,
Sa ew rea ot tsi pmogin sebaceu ti si ghnti,
Ew doluw dnfi ti a rthut bhto ni drow nad niddee,
Htta how tires ot eb phypa si ruse ot descecu.

ADA ARMAND.

10—PUZZLE.

There was a ship crossing the ocean and there were on board twelve white men and twelve negroes. The provisions getting scarce it was decided that twelve men should be thrown overboard. The captain's wife made an agreement with them that by counting every fifth man should be thrown over, she placing them. And by the way she did it every fifth man was a negro. How did she place them?

GEO. KELLER.

11—RIDDLE,

I am welcome to all, from cottage to throne,
There's scarce a condition where I am unknown.
I am a friend to the peaceful, a foe to all strife;
My presence is needful to keep you in life.
By chance you may find me as far off you roam,
But I ever am purest and sweetest at home;
When life is all over and troubles are past,
May I be your portion forever at last.

EDMUND PEPPER.

Names of Those Who have Sent Correct Answers to June Puzzles.

Robert J. Risk, Robert Wilson, Belle Richardson, Willie B. Bell, Edna Benson, Joseph Allen, Wm. Jackson, Jane L. Martin, Lotta A. Boss, E. W. Hutcheson, Wm. A. Laidman, Ada Armand, Martha Girouard, Henry Reeve, Tillie Hodgins, Mary Morrison, Annie M. Scott, Emma Dennee, Minnie Stafford, Ellen D. Tupper, Frank L. Milner, Alice Mackie, Robt. Kerr, Minnie A. Stevens, Edmund Pepper, Will Thirlwall.

Answers to June Puzzles.

1—

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      F           M
    O R E       P I T
  W H E A T   C I D E R
F L O D D E N S A D D L E S
F R E D E R I C K M I D D L E T O N
  S P O R T E R I N V E R S E
  W H I T E     W A T E R
    I C E         L O T
      K             N
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2—Balm, palm; utter, otter; munch, bunch; foam, roam; decent, recent; finger, ginger.

3—Intelligence and courtesy not always are combined;
Often in a wooden house a golden room we find.

4—Swallow, hawk, grouse, raven, sparrow.

5—

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R I E L
I N T O
E T N A
L O A D
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6—1, Gray; 2, Lockhart; 3, Johnson; 4, Goldsmith; 5, Shakespeare; 6, Longfellow; 7, Milton; 8, Cowper; 9, Bloomfield; 10, Ruskin.

7—

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T A R D Y
A D O R E
R A T E S
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8—

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        S H E
        S W I T
        W O N E
  S T A N D A R D S
  S H I N D O S T A N
  E X P O S I T O R
        O A T E
        S A T
        A N Y
```

9—With every bird its own nest is charming.

10—
Regal—real——G
Clean—clan——E
Donor—door——N
Spear—spar——E
Revel—reel——V
Stair—stir——A

11—Voice; woman; clock.

Wanted—A Little Girl.

Where have they gone to—the little girls,
With natural manners and natural curls?
Who love their dollies and like their toys,
And talk of something besides the boys?

Little old women in plenty I find,
Mature in manners and old in mind;
Little old flirts who talk of their "beaux"
And vie with each other in stylish clothes.

Little old belles, who at nine and ten,
Are sick of pleasure and tired of men,
Weary of travels, of balls, of fun,
And find no new thing under the sun.

Once, in the beautiful long ago,
Some dear little children I used to know,
Girls who were as lambs at play,
And laughed and rollicked the livelong day.

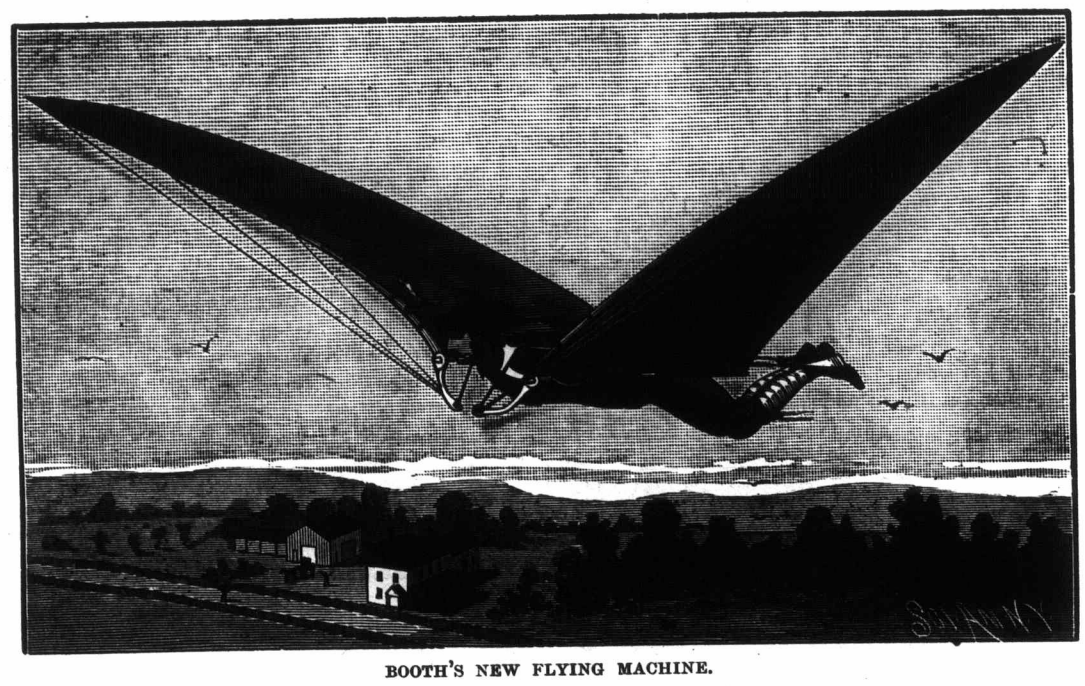
They thought not at all of the "style" of their clothes,
They never imagine that boys were "beaux;"
"Other girl's brothers" and "mates" were they,
Splendid fellows to help them play.

Where have they gone to? If you see
One of them, anywhere, send her to me.
I would give a medal of purest gold
To one of those dear little girls of old,
With an innocent heart and open smile,
Who knows not the meaning of "flirt" or "style."

A New Flying Machine.

The easy and graceful flight of birds through the air has for the last hundred years been a problem occupying the acutest minds. Attempts have been made during the same period to imitate the motion of the bird in ethereal space, either by the aid of the application of the balloon or by the use of the muscles of the human body alone. Attempts in this direction, although none have as yet been crowned with success, are praise worthy, and doubtless will in time achieve a fair degree of success. The accompanying engraving represents a flying machine, which is the invention of Dr. H. P. Booth, of Chippewa Falls, Wis. The fundamental principle of this flying machine is in using simultaneously every important muscle of the body for the purpose of elevating the body and propelling it forward through the air.

In harness a man has lifted 3,500 pounds, and this wonderful result is achieved only by allowing every muscle to act simultaneously to its fullest capacity, and under the most advantageous circumstances. This flying machine is merely a harness by which the human body acts to its best advantage, to the end that it may be both lifted and propelled; and if flying by muscular force alone is ever accomplished, it must be by using all the power there is in the human frame. In this machine there are two wings, each of which is from 12 to 15 feet long, and the breadth equal to the length of the operator, from his shoulders to his feet. The frame of the wings consists of three bamboo poles lashed together, and bent to suitable shape, and covered with silk. A cord extends from one extremity to the other of each of these wings (that is, from the heel to the tip,) which serves to give the wing proper shape and tension, being covered by the silk of the wing.



BOOTH'S NEW FLYING MACHINE.

The wings are provided with suitable valves, which open on the upward and close on the downward movement. The frame of the wings forms a right angle in front of the shoulders, and below the breast of the operator, as shown in the engraving; and to these is attached two strong ropes of rawhide. Each of those ropes passes from the wing to which it is attached to the shoulder of the operator, who is supplied with a suitable collar, which supports the frames of the wings loosely, and runs along the back, forming a pair of loops for the feet to pass through. When the body is forcibly straightened, the wings are brought down with all the power of the most powerful muscles of the body, as shown in the engraving, and this movement is also assisted by the strong muscles of the arms, operating the wings from the under side. Over the shoulders, extending from one wing to the other, is a strong rubber spring, the tendency of which is to lift the wings, thus assisting the arms in the upward movement. If desired, the hands, instead of operating the wings from the under side, may grasp the short lever forming the base of the wing, and thus make use of more powerful muscles of the arm than if the arms are extended. Which of these is best is, of course, a matter to be determined by experiment. Each wing may be operated independently of the other, it being only necessary to operate one foot or the other to give each wing just such a movement as may be desired. A canvas extends from the base of one wing to the other, forming a sort of stretcher, upon which the operator rests. From the lowest point of the base of the wings are several small stay ropes running to different points of the wings, which serve to stiffen and strengthen them. In this device the body of the operator offers the least possible resistance to the air, he being in precisely the same attitude that a bird is in during flight. The parts of the apparatus are constructed of the lightest as well as the strongest materials.

Fourteen Wonders of the World.

The seven wonders of the world in ancient times, were the pyramids of Egypt, the Pharos of Alexandria, the walls and hanging gardens of Babylon, the temple of Diana, the statue of the Olympus Jupiter, the Mausoleum of Artemsia, and the Colossus of Rhodes.

The seven wonders of the world in modern times, are the printing press, the steam engine, the telegraph, the daguerreotype, the telephone, the phonograph, and the electric light.

The so-called seven wonders of the ancients were merely trifles compared with those of the present time. The Brooklyn bridge, for example, would make the hanging gardens of Babylon a mere toy, while the whole seven wonders put together would sink into insignificance could the builders have seen a lightning express train at full speed.

Puzzled.

Banks, in order to prevent roguery, require that persons who present checks to the tellers shall be known by the tellers, or shall be identified by some person with whom the teller or bank officers are acquainted. The Commercial Advertiser humorously shows how a free-and-easy German met this requirement:

A German citizen approached the window and requested that a check payable to the order of Schweitzercase be cashed. "*Ja*, dot's me," he nodded reassuringly, in answer to the teller's look of inquiry.

"But I don't know that you are Mr. Schweitzercase. You must get yourself identified," said the teller.

"How vas dot?" asked the German citizen, with a puzzled look.

"You must get some one to identify you," repeated the bank officer. "I don't know you."

"Ah! *ja*," cried John, much relieved. "Dot's all right. *I don' know you, neider.*"

A party of young men travelling in Europe had among them a citizen of our great republic who was so thoroughly patriotic that he could see no excellence in anything in the Old World as compared with his own country. Mountains, water falls, lakes, churches, monuments, scenery, and all other objects of interest were inferior to what the United States could show His companions became somewhat tired of his overweening boastfulness, and determined to "take him down a peg." The party spent a winter in Rome; and one evening, having all things prepared, they induced their Yankee friend to join a drinking bout, and so managed that they kept sober while he got gloriously drunk. Thereupon they took him up and carried him into the Catacombs, laid him carefully down, with a candle within reach, and retired a short distance out of sight to wait for developments.

After a while their friend roused up, having slept off his first drunken stupor, and, in a state of some astonishment, began endeavoring to locate himself, at the same time muttering: "Well—hic—this's a little strange. Wonner—hic—where I am, anyway."

He got out his match, lighted his candle, and began to study his surroundings. On each side were shelves piled with grinning skulls, and niches filled with skeletons, while all about were piled legs, arms, ribs, and vertebræ—a ghastly array, and altogether new to him

He nodded to the skulls on one side with a drunken "How de do—hic?" and on the other with, "How d'ye feel—hic—anyway?" took a look at his watch, and once more at his surroundings, got on his feet, took off his hat, and holding it above his head, remarked, loud enough for his friends to hear: "'S all right; s—hic—all right. Morning of the resurrection, by jingo!—hic. *First man on the ground—'rah for United States! Allers ahead—allers bound to be ahead. 'Rah for me specially!*"

The Little Ones' Column.

Lily's Ball.

Lily gave a party,
And her little playmates all,
Gayly dressed came in their best
To dance at Lily's ball.

Little Quaker Primrose
Sat and never stirred,
And, except in whispers,
Never spoke a word.

Tulip fine and Dahlia
Shone in silk and satin;
Learned old Convolvulus
Was tiresome with his Latin.

Snowdrop nearly fainted
Because the room was hot,
And went away before the rest
With sweet Forget-me-not.

Pansy danced with Daffodil,
Rose with Violet;
Silly Daisy fell in love
With pretty Mignonette.

But when they danced the country-dance,
One could scarcely tell
Which of these two danced it best—
Cowslip or Heather-bell.

Between the dances, when they all
Were seated in their places,
I thought I'd never seen before
So many pretty faces.

But of all the pretty maidens
I saw at Lily's ball,
Darling Lily was to me
The sweetest of them all.

And when the dance was over,
They went down-stairs to sup,
And each had a taste of honey-cake,
With dew in a buttercup.

And all were dressed to go away
Before the set of sun;
And Lily said "Good-bye!" and gave
A kiss to every one.

And before the moon or a single star
Was shining overhead,
Lily and all her little friends
Were fast asleep in bed.

The Maiden and the Rainbow.

I remember a story, my children,
That oft in my childhood was told,
Of a maiden who followed a rainbow
In search of a large bag of gold.

For thus runs the story, my darlings,
If once she could come to the end,
She'd find all the gold that she needed
And plenty to give to a friend.

So over the hill-sides she clambered,
And down in the valleys she went,
Though rough was the path that she travelled
Upon her great search all intent.

Ne'er minding the brambles that caught her;
Ne'er minding the rainstorm that beat,
Though tired grew the frail little body,
And weary and sore were her feet.

Forgetting her home and its duties,
Forgetting her lessons unlearned,
But looking afar to the heavens,
Where the bow with its bright colors burned.

Still onward and onward she wandered,
Still watching the rainbow so fair,
Till all of a sudden it faded,
And melted away in the air.

Then heavily homeward she plodded,
Though long was the path she must tread,
Ere safe in the arms of her mother,
She might wearily nestle her head.

And this is the moral, my darlings,
Which runs through the whole of my rhyme,
Don't leave your home duties unattended,
While far for a rainbow you climb.

Don't scorn all the pleasures around you,
Though those all round you seem fair,
Since, like the bright bow of a maiden,
They may vanish and fade in the air.

For ever around you are duties,
And lessons will come each day;
Rich rewards will fidelity bring you,
Though rainbows may vanish away.

"Well, that place won't do for us, remarked Mrs. Silvermine, of Colorado, reading a Summer resort circular, "for they haven't got any malaria. You don't catch me at any of them hotels as hasn't got all the improvements and conveniences of the age.

Somebody gave little Augustus two toys.—"I will give this one to my dear little sister," he said, showing the largest. "Because it is the prettiest!" said the delighted mamma. "No," he replied, without hesitation; "because it is broken."

Commercial.

THE FARMER'S ADVOCATE OFFICE,
London, Ont., July 1, 1885.

June has been a fine, cool month, with frequent showers and cool nights—much too cool for the growth of corn and other crops requiring heat. Crops of all kinds are looking well, and give promise of another good harvest. While prices of all kinds of produce are low, and likely to be so, yet all the goods that a farmer wants are equally low, so that they have no serious cause for complaining.

WHEAT.

The market for wheat has changed very little the past month. The leading centers are very quiet, and very little disposition to speculate. Crop reports from various parts of the States indicate a large falling off in the coming winter wheat crop. Some estimates put the shortage at 160,000,000 bushels of winter wheat. The present condition of the spring wheat crop is good, but will require favorable weather until harvest.

The wheat market at Chicago has been dull and irregular, but there has been more manifestation of confidence. The general outlines of the situation do not appear to have changed, but the quantity of wheat continues to decrease. It is reported that Kansas farmers are cutting considerable of their wheat and making "hay" of it on account of chess. Harvest reports from Southern Illinois say that ten per cent. of the crop is not fit for seed. Consolidated winter wheat reports from 1,190 points in nine States gives the following: 807 report development of chess or cheat in wheat, 392 not; 466 report chinch bugs or fly in wheat, 791 not; 672 report wheat headed out to usual height, 516 not; 431 report they will harvest surplus over bread and seed, 767 not; 112 report spring wheat is being imported to make up deficiency in shortage crop, 920 not.

All these things continue to make a nervous market. A prominent trader says to-night: "I still believe wheat will bring much higher prices in this market before the close of the calendar year, but I regard the prospects of its doing so speedily as much less bright than a month ago." Another dealer says: "I can not advise purchases at present, for I believe the market will drag along, and even if there is no break the bulls will be out carrying charges." On the other hand a bullishly inclined operator declares: "Every day makes the situation less oppressive, and some actual demand for spring wheat is manifest. Last week Minneapolis millers could not sell at any decent price; since then six more mills have started up. The visible supply on the ocean is decreasing at the rate of 1,500,000 bushels per week, and the imports into Great Britain are 75 per cent. American wheat."

LIVE STOCK.

The demand for good heavy shipping cattle continues good, and prices are somewhat better.

WOOL.

Supplies are coming forward very slowly, and the prices paid are from 17c. to 20c. for selected fleeces. There is very little animation in any department of the market.

London Wool, 4th.—Third series sales opened with full attendance. Competition brisk in both home and export trade, especially so for cross-breds, which sold ½d. above last year's rates. Cape and Australian merino averaged steady value, 9,730 bales being sold. At Leith, on same day, prices showed firmness.—[Glasgow Herald, 5th.

CHEESE.

An air of depression overhangs the cheese market which is not to be shaken off. The offerings at all the markets throughout the country have been very heavy, with sales noticeably small. The small quantity sold indicates that factory-men have adopted a holding policy and are trying to resist any additional concessions on their June cheese. On the other hand there doesn't seem to be much disposition on the part of the buyers to wade in at the prices sellers are asking. The question now seems to be, shall the buyers or sellers yield first? If Liverpool is any index of affairs the advantage is likely to be on the side of the buyer. We think factory-men are standing very much in their own light by not accepting the situation and taking the offers made, and let their cheese go forward and into consumption. We think Western Ontario factory-men and salesmen are making a sad mistake in not letting their cheese go off freely. New York and Quebec men are selling right along, and the first thing our western

men will know they will be left with a load of cheese on their hands while their competitors are unloaded, and at as good, if not much better, prices than they will have to take two or three weeks hence.

The following are the shipments from Montreal for the week ending June 27, 1885

Per	To		Butter, pkgs.	Cheese, boxes.
Parisian	Liverpool	....	.....	18,931
Brooklyn	"	....	140	14,501
Quebec	"	....	.....	5,510
Lake Nepigon	"	....	.....	300
Carthaginian	Glasgow	....	1,213	7,561
Concordia	"	....	.....	766
Total			1,353	47,569
On through shipment			966	22,671
Last week			100	32,499
Corresponding week, 1884			1,184	53,664
Corresponding week, 1883			745	34,033
Total to date			1,711	144,423
Total through shipment			1,116	57,437
To same date, 1884			3,091	198,275
To same date, 1883			2,651	104,510
To same date, 1882			2,711	119,033

At Little Falls on the 29th ult., there were sales of 10,000 boxes all June cheese; 4,000 at 6½c., 400 at 6⅝c. and 1000 at 7c., balance consigned.

BUTTER.

Butter is ruling low, and likely to do so for some time in the face of a heavy make and the low price of all other lines of provisions. In creamery there has been some business in the country to cost 17c. to 17½c., but the factorymen are asking 19c. to 20c.

PRICES AT ST. LAWRENCE MARKET, TORONTO.

	July 1st, 1885.	
Chickens, per pair	$0 35	0 40
Ducks, do.	0 70	1 00
Butter, pound rolls	0 14	0 15
Butter, large rolls	0 12	0 14
Butter, Inferior	8	10
Lard	11	12
Bacon	9	12
Turkeys	1 00	2 00
Geese	0 85	1 00
Cheese	0 9	0 10
Eggs, fresh, per dozen	0 12	0 13
Potatoes, per bag	0 30	0 35
Apples, per bbl	1 50	2 50
Cabbage, per dozen	0 40	0 50
Turnips, per bag	0 35	0 40
Carrots, per bag	0 30	0 35
Beets, per bag	0 50	0 60
Parsnips, per peck	0 15	0 20
Onions, per bushel	1 00	1 10

PRICES AT FARMERS' WAGONS, TORONTO:

	July 1st, 1885.	
Wheat, fall, per bushel	$0 88	0 90
Wheat, spring, do.	0 88	0 90
Wheat, goose, do.	0 74	0 76½
Barley, do.	0 55	0 65
Oats, do.	0 37	0 38
Peas, do.	0 64	0 65
Rye, do.	0 70	0 00
Beans, do.	1 00	1 25
Dressed hogs, per 100 lbs	6 50	6 50
Beef, forequarters	4 00	5 50
Beef, hindquarters	8 00	10 00
Mutton, carcass	6 50	7 50
Clover	9 00	11 00
Timothy	14 00	17 50
Straw, do.	9 00	11 00

LIVE STOCK MARKETS.

Buffalo, June 29, 1885.

CATTLE.

CATTLE—Receipts, 7,241, against 6,933 the previous week. The supply of cattle on Monday was heavy, 108 car loads being on sale. Reports from the east were unfavorable and the market ruled dull at a decline of 25c. per hundred on heavy shipping steers, and 10c. to 15c. on light butchers' as compared with the closing prices of the previous week. The highest price paid was $6 for a lot of extra steers by a local dealer, while shippers paid $5 40 to $5 80 for heavy, and $4 65 to $5 25 for mediums. Mixed butchers' stock sold at $3 65 to $4 20, and stockers at $3 50 to $4. The arrivals were light on Tuesday, and Wednesday the market ruled steady at Monday's rates. Of Michigan cattle 44 steers av. 1,067 lbs. at $5 20; 21 do. av. 1,120 lbs. at $5 20; 19 do. av. 1,230 lbs. at $5 60; 18 do. av. 1,360 lbs. at $5 80; 7 do. av. 1,457 lbs. at $6; 14 do. av. 1,097 lbs. at $5 30; 20 do. av. 1,000 lbs. at $4 90; 22 do. av. 962 lbs. at $4 75; 20 do. av. 1,147 lbs. at $5 25; 25 mixed butchers' stock av. 845 lbs. at $4 65; 19 do. av. 1,013 lbs. at $4 50; 30 stockers av. 692 lbs. at $3 75; 28 do. av. 781 lbs. at $3 85. The following were the closing

QUOTATIONS:

Extra Beeves—Graded steers weighing 1,450 lbs. and upwards	$5 85	@$6 10
Choice Beeves—Fine, fat, well-formed steers, weighing 1,300 to 1,400 lbs.	5 50	@ 5 75
Good Beeves—Well-fattened steers weighing 1,200 to 1,350 lbs.	5 25	@ 5 50
Medium grades—Steers in fine flesh, weighing 1,050 to 1,250 lbs.	4 90	@ 5 20
Oxen—Coarse rough to extra	3 50	@ 5 25
Good Butchers' Beeves—Light, fat steers, weighing 900 to 1,000 lbs.	4 35	@ 5 00
Heifers—Fair to choice	3 80	@ 4 25
Cows and Heifers—Good to choice	3 50	@ 4 25
Mixed Butchers' Stock—Common steers, stags, old cows, light heifers, etc	3 25	@ 4 60
Stockers—Good to choice western, weighing from 950 to 1,000	3 50	@ 3 85
Canadian feeders	4 10	@ 4 25
Stock bulls	2 75	@ 3 15
Butchers' do., fair to good	3 50	@ 4 00
Veals—Fair to prime of 160 to 210 lbs. average	4 50	@ 5 35

SHEEP.

Receipts, 25,625, against 30,600 the previous week. The receipts of sale sheep on Monday were about 30 loads. The market ruled fairly active with a slight improvement in prices, and about all were sold. There were but few on sale Tuesday and Wednesday, but reports from the east were bad, and the market had a downward tendency. Fair to good 70 to 80 lb. sheep sold at $2 75 to $3 25; 80 to 90 lb., $3 50 to $3 80; 90 to 100 lb., $3 90 to $4 25; 100 to 115 lbs., $4 30 to $4 45; fair to good spring lambs, $4 50 to $6 25. We note sales of 105 Michigan sheep av. 85 lbs., at $3 60; 115 av. 82 lbs. at $3 75; 176 av. 94 lbs. at $4

HOGS.

Receipts, 25,635, against 42,455 the previous week. The supply of hogs on Monday was light, and the market active at a shade stronger prices. The advance was lost on Tuesday, and the market closed weak on Wednesday, with good to choice Yorkers selling at $4 30 to $4 45; fair do., $4 20 to $4 25; medium grades fair to choice, $4 25 to $4 30; good to extra heavy, $4 20 to $4 25; pigs, common to choice, $4 to $4 40; skips and culls, $3 to $3 50.

Expensive Living.

Mr. Edward Atkinson has been engaged for some time past endeavoring to find the average cost of living in the U. S., and by getting returns from a large number of people, North and South, he arrives at the following as the cost of living, per person:

	Cents per day.	Cost per year.	Total for United States.
Meat, poultry and fish	9.70	$35.31	$1,765,000,000
Dairy and eggs	5.60	20.30	1,019,000,000
Flour and meal	2.50	9.10	455,000,000
Vegetables	1 98	7.21	360,500,000
Sugar and syrup	1.94	7.06	353,000,000
Tea and coffee	1.02	3.71	185,500,000
Fruit, green and dry	0.62	2.26	113,000,000
Salt, spice, ice, etc	0.49	1.78	80,000,000
Total	23.85	$86.81	$4,340,000,000

In other words, it cost four and one-third billion dollars annually, nearly fifteen times the value of our cotton crop, to simply find the people in food enough to keep them alive from day to day. The cost of living varies in the different sections of the country. It is highest in New England, where it averages twenty-eight cents per person, and decreases as you go from the crowded and manufacturing to the agricultural sections where the food crops are produced, being 30 per cent. cheaper in the South and West than in the Eastern States.

Nearly one-half of our whole food supply—in cost at least—is meat. Another quarter of our market bill is for dairy products and eggs, in which also we probably lead the world in consumption, while "the staff of life" costs barely one-half as much.

What these statistics show the American table to be sadly lacking in is the purely agricultural productions such as vegetables and fruits. In a land yielding such a variety of vegetables as this, of excellent quality, one would expect them to play a very important part on our tables, and yet we spend as much for sugar as for vegetables, and nearly twice as much for tea and coffee as for all the fruits, green and dry, we eat.

(See Notices, page 220.)

Notices.

LIFE INSURANCE.

In an issue of the Monetary Times, one of the most ably and independently conducted publications in Canada, there appears an article exposing the dangerous and almost fraudulent systems of life insurance too numerously operating in the U. S. and Canada. Thousands of farmers and others must, we think, be paying sums of money in the vain hope that their descendants will be benefited by the expenditures in after years. We would advise all that are depriving themselves of necessities in hope of future benefit to their frmilies, to endeavor to procure a copy of the Monetary Times of June 19th. If we intended to insure in any company at the present time, we should prefer the Ontario Mutual Assurance Co. of Waterloo. There are names of highly honorable men on their list of directors, and from their reports they show a most satisfactory increase in business; they offer as reasonable rates and safe investment as any we have, and as sure a prospect that the claimants will receive their dues at a proper time.

How to Reach the Resorts of Colorado.

Colorado has become famous for its gold and silver production, its picturesque scenery, and delightful climate. Its mining towns and camps, its massive mountains, with their beautiful green-verdured valleys, lofty snow-capped peaks, together with its hot and cold mineral springs and baths, and its healthful climate, are attracting greater numbers each year. The journey, from Chicago, Peoria or St. Louis to Denver (the great distibuting point of Colorado), if made over the Burlington Route (C. B. & Q. R. R), will be as pleasant and gratifying as it is possible for a railroad trip to be. It is the only line with its own track between the Great Lakes and the Rocky Mountains. These through trains are elegantly equipped with all the modern improvements. At all coupon ticket offices in the United States and Canada will be found on sale, during the tourist season, round-trip tickets, via this popular route.

Book Notices.

We are in receipt of a pamphlet on "Agricultural Investigation," containing a lecture delivered at Rutgers College, N. J., under the auspices of the New Jersey Agricultural Experiment Station, the State Board of Agriculture, and the State Agricultural College. The lecture was delivered by J. H. Gilbert, M. A., LL. D., F. R. S., who is associated with Sir J. B. Lawes, of the Rothamsted Experiment Station, England. We are indebted to Major Henry E. Alvord, of the Houghton Farm, for the work.

Received a work containing a copy of the proceedings of the 4th and 5th meetings of the Society for the Promotion of Agricultural Science. This society contains a large membership of all the leading agricultural scientists in the United States, who meet periodically for the purpose of discussing practical questions connected with agriculture. The work contains a number of able papers read before the meetings of the society.

(See Stock Notes, page 222.)

Stock Notes.

Mr. John Hart, of Woodstock, has just purchased the red bull Prince 2nd. This bull was bred by Mr. S. White, M.P.P., Windsor, and has already left some splendid stock. Prince 2nd was born Jan. 2nd, 1881, got by 6th Duke of Vinewood; dam, Princess of Elmwood, by Gaudy Duke.

Wm. Linton, of Aurora, Ont., has recently imported 10 valuable Shorthorns, seven females and three bulls; all were bred at Sheriff Hutton, except one bull, which was bred by Mr. Brure, of Braithwaite Hall, and are, with the exception of one, of the Sowerby family. Mr. L. informs us that these are the first females of this family that have ever been brought to this continent.

When recently on the rolling hills of Pickering, we had the pleasure of calling on Mr. Arthur Johnston, of Greenwood, and found his stock in fine, healthy and thrifty condition. He informed us he has the second largest herd of Shorthorns in Canada. Mr. J. claims to have three of the best male animals in Canada, viz., Shorthorn bull, Clydesdale stallion and Shetland stallion.

Colts should not be permitted to stand on a plank, cement, paved or any hard floor the first year, as these are liable to seriously effect the feet and legs, says the Horseshoe. Unless the yard where the colt runs has a fine, dry, gravelly soil, it should be well littered, so as to keep their feet dry. Mud or soil, wettish soil is apt to make tender hoofs, no matter how well bred the colt may be. One reason why the horses in one district grow up superior to those in another, in hoof, bone, muscle and action, is because it has a dry limestone and silicious soil. When the mare is at work, do not let the colt run with her, and if she comes back from her work heated, allow her to get cool before sucking the colt, as her over-heated milk is liable to give the foal the diarrhœa.

Colman's Rural World states that sheep growers are often troubled with a disease among their sheep which causes the wool to drop off. In most cases the wool first peels from the hind legs and back, leaving the skin bare. There are generally no scabs or ulcers, and the only abnormal feature noticed is a redness of the skin in the woolless parts. In some cases there are sores. The sheep are nearly always in good condition while suffering from this affection. The disease is called "pelt rot" in some localities, and it can be easily cured by the application of a stimulating antiseptic, like a weak solution of saltpetre, in the proportion of two tablespoonfuls of saltpetre to a gallon of water. Apply the solution to the effected parts, wherever examination shows them. If the first cases are not promptly treated, the whole flock is liable to infection and to serious damage in the end. The cause of this trouble is not definitely known. Some of the best conditioned and most carefully fed and housed flocks are attacked by it.

To Indian Sympathizers in the Qu'Appelle Valley, N. W. T.

Information is wanted regarding a female Indian child that was christened by Aquila Walsh and named Clema Pence in honor of the President and Secretary of the Press Association, who were present at the christening four years ago. A sum of money has been subscribed to aid in the education of that child with the object of making her an instructress to the Indians. Should any of our subscribers or any of the missionaries or mounted police be enabled to find the residence of the child's parents, or give such information as might aid the object in view by ascertaining if the child is alive, they might be aiding a good cause by furnishing particulars to the office of the FARMER'S ADVOCATE.