Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

- ☐ Coloured covers / Couverture de couleur
- ☐ Covers damaged / Couverture endommagée
- ☐ Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- ☐ Cover title missing / Le titre de couverture manque
- ☐ Coloured maps / Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- ☐ Bound with other material / Relié avec d'autres documents
- ☐ Only edition available / Seule édition disponible
- ☐ Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.

- ☐ Coloured pages / Pages de couleur
- ☑ Pages damaged / Pages endommagées
- ☐ Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☑ Pages detached / Pages détachées
- ☑ Showthrough / Transparence
- ☑ Quality of print varies / Qualité inégale de l'impression
- ☐ Includes supplementary materials / Comprend du matériel supplémentaire
- ☐ Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from scanning / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été numérisées.

☑ Additional comments / Commentaires supplémentaires: Continuous pagination.

12 Copies

FREE BY LAW.

LOWER CANADA

AGRICULTURIST

MANUFACTURING, COMMERCIAL, AND COLONIZATION INTELLIGENCER

OFFICIAL SERIES OF THE AGRICULTURAL BOARD AND SOCIETIES.

PUBLISHED UNDER THE DIRECTIO

M. J. PERRAULT,

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

JUNE 1866.

SPARGERE COLLECTA.

OFFICE AT JOHN LOVELL'S PRINTING ESTABLISHMENT, ST. NICHOLAS STREET,
MONTREAL.

Official Dep'nt.

MEMORANDUM ON CHOLERA.

ADOPTED by a Medical Conference convened at Ottawa, the Seat of the Government of Canada, by the Honorable the Minister of Agriculture, pursuant to an Order of His Excellency the Governor General in Council.

Members of the Conference.

Dr. MacDonnell—*Chairman*, Dr. Van Cortland, Dr. Hill, Dr. Landry, Dr. Dickson, Dr. Aikins, Dr. Beaubien, Dr. Grant, Dr. Taché—*Reporter*.

It is earnestly hoped that the following short chapters and paragraphs (though containing nothing assumed to be new for persons acquainted with moral, medical and social sciences) will not be without good results, intended specially as they are:

1st. To confirm the public mind against useless and dangerous fears, by showing that the first duty, as well as the better understood interest of every one, is to meet manfully, with a truly devout spirit, the threatening scourge; 2nd. To diffuse amongst the people a sufficient knowledge of what ought to be done to alleviate the calamity and to guard against errors which are so apt to pervade a community in times of such visitations.

Should everything be followed out that is recommended in this Memorandum and be executed, and should the threatened pestilence not invade Canada, it could never become the subject of the slightest regret, as being so much time and expense uselessly thrown away; because all the measures are calculated, in every respect, to improve generally the moral, the domestic, and the social habits of our population.

EXTERNAL CHARACTERS OF CHOLERA.

Any discourse of a purely scientific nature would be out of place in such a document as this; but it is of all importance to insert in this Memorandum such information as would render the disease, in its ascertained character and effects, generally understood by members of the community at large: because no one knows to what extent even a small amount of knowledge may become useful in removing painful and dangerous fears or equally perilous feelings of blind security, also in avoiding fatal errors, and thus making in many instances and many ways its possessor serviceable to himself, relatives and fellow-creatures generally.

Cholera is apt to appear in every climate (very few countries, indeed, having escaped its visitation); it attacks both sexes, every age, and all conditions of life, the poorest and the wealthiest, the weak and the strong.

Generally, but not always, it appears more fatal where misery, filth and crowding are to be met with, and intemperance and other vices are sure to render its blows more disastrous.

The approach of Cholera is often preceded by contagious, endemic or epidemic diseases and a more than usual prevalence of affections of the stomach and bowels, and oftentimes also by diseases of a disastrous nature attacking domestic animals.

Occasionally the appearance of Cholera seems to have a marked effect either in increasing or diminishing the intensity of other concomitant diseases; at other times it appears to fail to exercise the slightest effect on them. The experience of Canadian medical practitioners has gone, however, so far to establish that Cholera has generally superseded in a great measure all other diseases.

There are only two circumstances connected with this scourge which seem to observe a determined character of constancy, these are the ratio of mortality to the number of persons attacked, and the influence of continual cold on the duration of the pestilence.

The ratio of mortality almost at all times and in all countries is never below one-third, and sometimes averages from forty to fifty deaths for every one hundred cases of confirmed Cholera. The appearance of the cold season invariably checks the insensity of the malady in moderate climates, and generally stops it entirely in severe climates. Whether these well asserted facts are of the negative, the dubial or the postive category, it is well that they should be made known to the public, to prepare the minds of all to see things as they are, in time of trial, and to guard against too illusory and hopeful expectations as well as against foolish fears; for a great many have fallen, and a great many are apt to fall easy vicitims of Cholera through imprudence and carelessness caused by an optimist view of the state of the matter, as well as through terror and despondency brought on by an exaggerated idea of the existing danger.

It is well that a general elementary knowledge of the real symptoms of Cholera should be possessed by every member of the community. Generally speaking, then, an attack of Cholera is preceded by a kind of malady called *Cholerine*, which may end, however, without a full development of the disease, but which seems to act ordinarily as its precursor.

The symptoms of *Cholerine*, also called *premonitory symptoms*, are the following, not always, however, to be met with in the same order, nor all at one time, nor the same in every person affected :—Noisy motions in the bowels, pains in the belly, loose evacuations, generally bilious, sense of general uneasiness and weakness, loss of appetite, whiteness of the tongue, sometimes there is headache and very frequently inclination to vomit.

In connection with these symptoms it should be remembered that, in time of Cholera, there is a great disposition to looseness of the bowels, which, if not attended to carefully, is apt to terminate in Cholerine as well as Cholerine in confirmed Cholera.

When the *premonitory symptoms* are followed by a real attack of Cholera, and when Cholera comes on without it, the progress of the disease is characterized by successive stages, which are respectively designated by some authors by the names of —1st, period of invasion ; 2nd, period of state or collapse ; 3rd, period of reaction ; 4th, period of termination ; simply first, second, third and fourth stages.

The period of *invasion* is characterized by several or all the following symptoms : diarrhœa, vomiting, pains in the regions of the stomach, cramps, general diminution of animal heat, coolness of extremities, increasing constricting sensation in the regions of the stomach, anxious expression of countenance, with alteration of the voice very peculiar to the malady, pulse quick and growing weaker and weaker, eyes depressed and sunk in their orbits, livid and contracted appearance of the face, irresistible thirst and desire for cold water and suppression of urine.

The period of *state (or collapse)* is characterized by an increase in the severity of the former symptoms, the skin in general becomes livid and bluish in color and bedewed with cold perspiration, the skin of the fingers assumes the same appearance as those of a drowned person, the pains and cramps increase to agony, the evacuations become of a whitish fluid, like thin gruel or rice water, they are often passed without the knowledge of the patient, the skin emits a fetid smell, a squalid appearance pervades the whole surface of the body, the breath is colder and colder, the respiration is much labored, a profound prostration of every vital action follows, and death quickly closes the scene ; but the intellect remains almost as perfect as in state of health nearly to the last.

The period of *reaction*, when it fortunately occurs, shows the following symptoms : the pulse rises gradually, the blue coloration of the skin disappears with the returning warmth of surface, the respiratory movements become more regular, the voice is by degrees restored to its normal tone, a warm moderate perspiration shows itself on the skin, the countenance is more natural and the face becomes more or less turgid and the eyes somewhat injected. Sometimes the reaction is too violent, and then there is danger of congestion of internal organs, specially of the brain.

The period of *termination* is characterized by a gradual return towards the normal state and by the re-establishment of the urinary and bilious secretions, coupled with the disappearance of the flushed and violent symptoms of reaction. But here again, there is danger of this short convalescence merging into a secondary affection somewhat resembling typhoid fever.

All these symptoms may vary a little in form, they vary a great deal in intensity, and somewhat also in order of succession : they may be all present and well marked in many cases, whilst in others some few symptoms may be absent, or nearly so ; but taken several at one time, they are characteristic of *Asiatic Cholera*.

Death may happen at any one of these four periods, but most generally takes place in the second stage.

The fatal termination of the disease, as well as recovery from it, may be determined in a few hours, and may be delayed for a few days. Deaths have been recorded to have happened after four hours of confirmed Cholera, and cases of seventy hours of sickness have also been reported ; however, such short and long duration are both extremely rare exceptions.

PROPAGATION OF THE DISEASE.

At the present time, Cholera is on its sixth general tour. It appears to have left Asia for the West with the Mahometan pilgrims of Mecca last year ; then, after

ravaging Egypt, it visited Turkey, Italy, and much of the Mediteranean coasts; it has since entered France by Toulon and Marseilles, has gone as far north as Paris, and crossed the Atlantic Ocean to extend its calamities to some of the islands of the Caribbean Sea. The probability of its coming as usual to Canada has called for new preparations on the part of our Government and our municipal authorities. The only countries which have enjoyed a kind of immunity from the visitation of Cholera are the extreme regions of the North and South, the remote interiors of continents, and the elevated regions of mountainous countries. The lines of its predilections are the navigable rivers; and many authors are of opinion that, generally speaking, the sea and lake sides and the vicinity of water courses are localities of choice for Cholera.

Notwithstanding some exceptional facts to the contrary, the disease makes more ravages wherever intemperance and other vices are to be met with, and wherever want, misery, crowding and filth are dominant. Cholera is apt to return to localities shortly after its disappearance thence, although ordinarily it travels on regularly; and although it commonly goes steadily from place to place in the line of its general course, it does, however, occasionally make a jump over distances of several hundred miles.

The direction of the winds seems to have very little influence, if any, on the propagation of Cholera, nor is it at all proved that the geological formation of a country nor its meteorological phenomena have any marked influence on its prevalence or intensity.

HYGIENIC PRECAUTIONS.

The Sanitary measures to be adopted can be conveniently classifed under two heads, viz: *Public* and *Private* measures, and these can again be conveniently subdivided into two other classes: measures relating to persons, and measures relating to things.

Necessarily the information or advice imparted in the following lines is restricted to general principles, intended to serve as a compendium on subjects upon which the reflections of all and the serious studies of some are to be directed. Sanitary measures concern every locality and every place, they apply even to isolated country dwellings of farmers and others, but they particularly apply to villages, towns and cities, because the larger the agglomeration of population in a given place the more those measures become necessary, from the fact that the actual number of lives exposed is greater, and also that the agglomeration increases the danger in a far greater ratio than that of numbers alone. Every thing being equal, a population of so many thousands gathered into a smaller space, will, in time of pestilence, suffer a greater loss than an equal number of persons spread over a larger superficies.

It is a matter of public security to have every thing of a dangerous nature removed from the centres of population and vicinity of human abodes; such as are contents of cess-pools, composts, offals, heaps of manure, carcasses of animals, soakage, in one word every sort of vegetable or animal matter in actual or impending decomposition.

In reference to the disturbing of such matters, when occurring in masses, a very important remark is to be made. Such masses should be carted away to farms in cold season. But if in time of actual pestilence it is better not to disturb them at all, but to resort to the means of disinfecting the surface, and covering them with a sufficient layer of dry earth.

Pools of stagnant water, open sewers, discharged ditches of establishments of industry are also vicinities of dangerous character; therefore to drain or to cover, or to disinfect them, are salubrious measures of great importance.

There is a numerous class of trades and manufactures which being in their very nature offensive ought not to be allowed to be carried on in the midst of towns and cities, such are the slaughtering of animals, collecting and storing of old rags and debris, manufacturing lime, vegetable charcoal, acids, coal oil refineries, tanneries, making of artificial manures, soda and candle factories, and many other branches of industry, especially those connected with the transformation of parts of animals, which debris are not to be collected in quantities without being submitted to inspection and sanitary precautions.

Large stables, collections of cattle intended for slaughter, and especially piggeries are very objectionable in cities: as the establishment of the first mentioned class cannot be prohibited, it is necessary that stringent regulations for the very frequent carting out of town of litters and manure be enforced.

The question of carrying off the surface

water, always more or less impregnated with putrescent matters in towns and cities, and the daily mechanical removal of the night soil, in other words the question of drainage and sewerage generally is as important in a sanitary point of view, as it is difficult of a satisfactory solution in a scientific and financial light. Evidently such complicated problems are not to be treated of in a paper like this: wherever a village, town or city can undertake such comparatively vast works its municipal authorities must have recourse to professional men to deal with the question on the spot.

In the absence of under drainage, open drains ought to be established to dry the soil, and in the absence of perfect sewerage (an extremely rare advantage,) disinfectants and interment, when practicable, are to be applied, if in conjunction one with the other so much the better.

After having thus enumerated the principal objectionable materials, trades and manufactures which ought to be prohibited, let every one be reminded of things which are to be provided, and especially of the very great importance of obtaining an abundant supply of water which should be of the best quality.

Every possible means to furnish plenty of good wholesome water to the population of villages, towns and cities ought to be put in requisition by the municipal authorities, in order to provide for an abundant supply of this commodity wanted at all times, but singularly indispensable in time of pestilence.

Such an enunciation bearing on measures of so self-evident a necessity, may appear to many nothing else than the useless uttering of truisms and common place remarks, but the daily neglect of these measures, the apathy entertained about them, the constant evils resulting from such apathy and neglect are a sufficient proof of the necessity of their being repeatedly brought before the public. Let these suggestions be continually dwelt upon lest, after having been carelessly heard, they should be entirely forgotten.

The cleaning of streets, yards, public buildings and private houses ought to be thorough before the hot season sets in and before the malady has made its appearance. There is in most of our villages, towns and cities quantities of old wooden pavements, planks and other decaying timber, lying in the streets and in and about the back grounds in a state of partial decomposition and absolutely saturated with filth and moisture of all sorts which should be burned, or carted out in open country early in the spring, should it be considered available for anything useful.

The sanitary or precautionary measures may be mostly all expressed by two collective words: *Cleanliness* and *Ventilation*. Cleanliness of the streets, passages, yards, dwellings public and private, infers the removal of all matters which are factors of decomposition, either as ferments or as fermentable bodies. Every remain either vegetable or animal is susceptible of decomposition, and consequently, when out of place, becomes a fertile cause of insalubrity and disease. Out of place is intended to mean where they are not wanted for actual and immediate use; for example, collections of hides and bones are out of place every where else than in the establishments where they are to be converted into leather, glue, animal charcoal or any other industrial product; and the establishments themselves are out of place in the midst of centres of population; again manure and composts are out of place any where else than on the farms they are destined to fertilize.

Cleanliness is obtained by scratching away, washing off and carting to the fields all offensive matters. In the cleaning of polluted places the use of a little chloride of lime in the water may be of great benefit. The same remark however which has been made about disturbing masses of matters during hot weather and in time of pestilence, also applies to filth collected on walls and other surfaces of dwellings and premises when under the immediate influence of extreme heat and moisture, putrefaction and diffusion of miasm, acquires an immense impetus under such circumstances, consequently it might not be unattended with danger to undertake any extensive hot water washings of these dwellings during sultry weather; and it might be better to cover the surfaces of such dwellings or their appurtenances with a thick coat of paint or lime.

As several allusions have already been made to disinfectants it is just as well to remark, so that it be well understood, firstly: that substances called disinfectants in common language, are not all possessed of such properties: Secondly, that even real disinfectants, (like all other precautionary measures) although of beneficial use, are not in themselves infallible resources—they are simply good adjuvants. Thus the ac-

quiring of the best conditions of salubrity is not a simple but a complex problem, the result can only be obtained by the operations of various forces converging towards the same point of action.

But few of the best disinfectants will be mentioned here, in order not to create confusion in the mind of persons not deeply versed in these matters, and also in order that special attention being concentrated on a few, more certainty of an ample supply of them is obtained, and the prevention of possible speculation imposing on the credulity of the people.

Quick Lime is recommended for its cheapness, for its being so readily obtainable everywhere, for its easy application and for its being so familiarly known to every one. It is well also to mention purifying qualities of powdered charcoal.

Chloride of lime, sulphates of iron and copper, and permanganate of potash, or Condy's fluids, are the other disinfectants recommended; and it is hoped that they will be imported (not being yet manufactured in the country) by druggists and merchants, in ample quantities and sold at a reasonable trade price.

These substances are not to be employed indiscriminately in places actually occupied by people; they are specially intended for sewers, heaps of dirt or manure, outside privies, night pails, &c. If otherwise employed they ought to be so under the direction of medical men or apothecaries.

Chloride of lime may be used in the proportion of one pound of Chloride to a gallon of water, and it is assumed that a pound of chloride of lime so diluted is sufficient to partially disinfect one thousand gallons of running sewerage; when used for washing a much weaker mixture is to be made, say an ounce to a gallon of water, and the articles are to be well rinsed and cleaned in pure water, and well exposed afterwards.

Sulphates of Iron and copper may be used in the proportion of a pound to a gallon of water for disinfecting filth and sewerage. Condy's strong or red fluid may be diluted in the proportion of one gallon to fifty gallons of water, and the weak or green fluid in the proportion of one to thirty gallons. However, strong may be the faith in disinfectants, in spite of what is alleged against them, they can never supersede or cause to be overlooked the more reliable measures, as are cleanliness and ventilation for instance.

Good ventilation infers firstly perfect cleanliness of dwellings; secondly, the avoidance of crowding, coupled with a free circulation of wholesome air.

The enunciation of this broad principle is suggestive of advice in a general form: that crowded and long standing gatherings of people are to be (as much as religious, educational, military and civic duties can permit) avoided during the reign of pestilence, especially at night, and that this precaution or rule applies not only to the interior of buildings, but even to meetings in the open air. Of course in the application of such a principle no one ought to indulge in pusillanimity and the drawing of extreme consequences.

Times of epidemic are not times to fly from the service of God in his own house; and they are no excuse for dereliction of other public duties, but they are times for prudence on the part of legitimate rulers, and of obedience on the part of other members of the community. It would be a desirable measure that, during the prevalence of Cholera, colleges and schools should be closed and vacated.

It is a rule to be always observed during mild seasons, that churches, public halls, and rooms in ordinary dwellings, when not actually occupied, should be open by means of their windows to the access of currents of fresh air, as sweeping as the state of the atmosphere and artificial means when at command can allow. This suggestion is not to be understood as recommending the introduction of cold draughts or direct strong currents of air where persons are standing, sitting or reposing; but under these circumstances ventilation should be effected quietly as well as steadily. Fresh air is a commodity which men can use and abuse.

In the present state of science no fixed formula can be given for the space of room allowance requisite for each person, nor is there any one admitted method of ventilating buildings, for the simple reason that ventilation depends on a multitude of circumstances, varying with the external ambient air, the habits, temperaments, healthy or unhealthy condition of persons, the dispositions and situations of tenements, and so forth.

A man can be ventilated to death by fresh air in a box and can be suffocated by foul air in an immense hall. It devolves upon every one in his public or private capacity to adopt measures of this kind, and upon the local Boards of Health during the prevalence of epidemics to see that no uncom-

mon evils resulting from deficiencies of space and ventilation are allowed to endanger the public health.

It is a precaution of the utmost importance (the abandonment of which might be felt fatal to many lives) that the stoves or heating apparatus of dwellings should be kept during all season in good working order, so that they can be used moderately in case of sudden lowering of the temperature and also in case of extreme dampness. For although ordinary and gradual diminution of temperature and continuous action of cold season such as heralds the approach of winter has a marked effect on the stopping of the disease, the same effect is by no means produced by an abrupt change from a hot day to a few hours of summer cold: such change, besides its depressing effect on the animal functions especially those of the stomach and bowels, seems to act by the way of reaction as an intensifying agent on the decomposition of organic matters, which cannot be entirely removed from the immediate vicinity of human abodes. It is not needless to remark that a heating apparatus is also a most useful means of effecting ventilation.

As to preservations of a purely hygienic character applying particularly to ordinary daily *regime*, they do not differ from those which apply at other times, with the exception that some innocent indulgences, such as friendly gatherings, might perhaps better be avoided, as well as anything indifferent in itself which is known by every one to have a depressive effect on the natural functions of the organism, and particularly any over exertion of the mind and body.

Again and again let it be repeated that drunkenness, immoderate use of food and drink, excesses and vice in general are *per se* predisposing causes of sickness, cholera specially and fatal complication of the malady.

There is no necessity in time of epidemic for a change of customary habits and diet provided they are good; far from it, there may be danger in making any important change.

But if the habits or diet are bad it is of much moment that they should be modified, and that such modification should take place before the apparance of the scourge, in order that all the functions of the body harmonize with such changed state of things before the time of trial has arrived.

Every article of food and every beverage or preparation known by a person as having on his bowels a loosening effect or producing costiveness are to be avoided; the first on account of their actual action, the second as necessitating afterwards the use of aperient medicines, or being apt to bring a reaction to the same effect. Care should also be taken not to fast when attending the sick, nor to remain too long without food at any time during pestilence.

Occasional use of bathing and the constant habit of daily cleanliness of person are evidently needed, but caution should be observed against too prolonged and frequent bathing.

It is well to wear warmer than ordinary summer clothing, especially flannel next the skin, because there is in times of Cholera a predisposition to sudden chillness, against which it is wise to be constantly guarded; the use of flannel belts on the belly is often recommended, and great care should be taken not to allow the feet to become cold and damp, especially when not in actual bodily activity.

As seen in the preceding lines, the principles of hygiene are in the main very simple, still their being enforced with strict observance on the public requires not a small share of industry and understanding on the part of those who are entrusted with that duty. The execution, however, of some of the measures (as applied to local circumstance) required in case of epidemic are exclusively within the province of the medical profession, and it stands to reason that there should be a comparatively large proportion of its members in the composition of the local Boards of Health. This is not to grant a favour, but rather is it an onerous and responsible duty imposed on a class of the community more strictly obliged by the nature of their avocation to undertake it.

INSTRUCTIONS AND ADVICE.

One of the evils connected with the appearanc of public pestilence is the indulgence in spreading reports, rumors and opinions of all sorts. Thence timid people are frightened, and excitable people lose their self-possession.

Men of systematic ideas propound wild theories, and credulous persons adopt them as absolute truths. Speculators are also apt to take their chance of such times, and long before the appearance of Cholera advertisements are seen offering for sale all sorts of remedies and specifics for that scourge. Patent medicines, previously announced as curative compounds against almost every

known ailment, are presented with a new placard, in which the word Cholera is added to the already long catalogue of fever, debility, inflammation, gangrene, diabetes, suppression of urine, constipation, diarrhœa, &c., &c., all of which are to be cured under all circumstances, real, possible or imaginary. Thus and in many other ways charlatanism is opening its meshes to credulity and fears.

To lend a too credulous ear to all these reports, rumors, predictions and promises become the source of much danger. The press should be guarded from giving countenance to such parties; for the injurious effects therefrom resulting, could they be realized, would be found to be of alarming magnitude.

The duty of every one is very simple, and to accomplish it is the only means of expecting immunity for ourself and of being useful to others. The laws of the country have provided that public bodies should be selected in each locality, to collect information, to watch over the progress of the malady and to give orders for the execution of all necessary measures; the wisest course, surely, is to look to these persons for information, if needed, and to accomplish cheerfully and faithfully what is recommended or ordered by them.

If sickness should come, there is a class of men whose minds have been directed to the study of the functions of the human frame and the cure of disease; their duty as well as their interest is to effect all that human skill can do to restore health, and on their success rest their honor, peace and comfort; it is true they may be unsuccessful in their efforts, but far less risk will be incurred than at the hands of irresponsible persons.

Some advice is much needed in relation to the attendance on the sick during Cholera, because cowardly fear may lead people even to forget what they owe to their fellow creatures and even to their near relatives; and on the other side, ill-advised devotedness may expose people to unnecessary danger. A very simple rule previously offered to the reflections of a sound intellect and to the feelings of an honest heart may do a great deal of good. Whoever is the sick and wherever he lays the prey to the malady, whatever your station in life you owe to him help and comfort; if he is in need of medical assistance seek it; if he requires anything in your power to give, give it to him; if he has no attendants, attend to him or procure them for him. But if the sick person happens to be well provided and attended to, then there is no occasion to go near him unless he is a bosom friend or a relative.

This place is just as good as any other to insert a remark which is to be taken as one of paramount importance. The articles of clothing and bedding which have been soiled by the dejections of the sick are to be first disinfected, and then washed carefully; if of small comparative value they had better be burned or buried. The dejections of the patients are to be received in pails containing some disinfectants, and are not to be then thrown into sewers, privies or cesspools, but are to be interred at some depth.

The crowding of people around a sick bed is especially bad in regard to Cholera. In duty and honor you are bound to face every danger when called upon for a good purpose, in duty you are bound to avoid the smallest risk when there is no useful object to be attained. If we except unwholesome crowding, there is not, generally speaking, so great danger as people may fancy in the attendance on the sick; and provided that the precautions indicated in this memorandum are observed, there is hardly any more peril than in the mere walking the streets of a locality under the scourge. Most of the medical men, sisters of charity and attendants of hospitals in the country, have weathered several epidemics without having been seriously ill, although living in close communication with the sick day and night for months; their secret has been to avoid fear, to be calm, cleanly and prudent.

In time of Cholera, Cemeteries must be the subject of very strict attention and are not to be allowed as places of public resort; it is better not to attend funerals in large numbers. Once on this subject it is well to guard against *precipitate* as well as too long delayed burials. The medical members of local Boards can frame instructions to persons connected with such a service; the inspection of a medical man is sometimes absolutely necessary. With proper precautions, there would be no danger in allowing families who have no means of going into into the expenses necessitated to carry on such precautions to have the consolation of having their dead buried in the usual way adopted by them, and be allowed the usual church service.

PROPHYLACTIC TIMELY TREATMENT.

In time of Cholera epidemics the stomach and bowels are apt to be easily deranged, and great care should be taken to remedy,

at once, such derangements, without fancying any danger when there is actually none. Sometimes Cholera is preceeded by *Cholerine* or *premonitory symptoms*, and sometimes it comes on without warning, even sometimes without many of its most striking characteristic symptoms.

In case of a sudden ailment, whenever medical aid can be obtained, it should be procured. But in the absence of such assistance, there are measures and simple treatment some of which may be administered by the patient himself, and others by any assistant; it is necessary that therefore such measures should be known by every body.

Any one attacked by pains in the stomach or bowels, colics, diarrhœa, however slight in appearance, should moderate his diet, and even abstain from strong or any food; he should avoid fatigue, cold and dampness, clothe himself warmly, and make a moderate use of some warm aromatic drink, like infusion of tea, camomile, ginger, mint, coffee or similar substances.

If the symptoms increase, or even at the onset of the complaint, there is a sensation of chill and inclination to vomit, then the patient must be put in a warm bed, between woollen blankets or sheets. The use of aromatic drinks are to be continued and frictions under the bed clothes, not uncovering any part of the body, and every other external means of warming the skin are to be applied.

It has been deemed wiser to abstain from offering any suggestion concerning treatment by medicines or drugs, on account of the danger accompanying the use of such agents by other than medical practitioners.

Once on the subject of duties connected with attendance on the sick, it is proper to remark that whilst it is at all times the duty of the physician and others to maintain a cheerful and encouraging demeanor towards a patient, yet it would be exceedingly culpable, especially with such a prompt malady as Cholera, to conceal from the patient his true condition.

Certain precautionary public measures of a prophylactic or preventive character, which may be adopted with immense advantage everywhere, and which are of absolute necessity in large towns and cities have to be indicated in general terms.

Amongst such measures the appointment of a medical health inspector stands first. The duties of such officer would be to examine beforehand, and during the prevalence of epidemic, the streets, yards, edifices, dwellings, wells and other water supply, to see whether such hygienic conditions, which are of a feasible nature under the circumstances have been adopted, and to report thereon to the local Board of Health and to the Municipal Corporation.

This officer would also be entrusted with the duty of imparting generally to the people such information as is likely to be of use in warning some against incurring unforeseen dangers, in alleviating the terrors caused by the apprehension of exaggerated or totally imaginary perils, and in detecting incipient sickness and enforcing treatment. Such service has already already been established with good results in several Europeancountries under the title of *preventive domiciliry visits.*

The establishment of temporary public dispensaries in different parts of large cities, under the immediate control of the local Board of Health is also a measure of the utmost importance where every one could be furnished with such remedies as are recommended for the treatment of premonitory symptoms, or with those prescribed by a medical attendant at a cheap price for all, and gratuitously for the poor. The same establishment could also be made a deposit of disinfectants and of flannels and other articles for the destitute, to be delivered on the production of a ticket from the local authorities at the cost of the municipality. In large communities it would be advisable to have always in requisition proper vehicles or ambulances for the removal of the sick; such conveyance could be in connection with with the service of both Cholera hospitals and dispensaries.

CURATIVE TREATMENT.

The treatment of Cholera is one of the most difficult of all therapeutic efforts which can be required from even the most experienced medical man. To enunciate such a proposition is to say that none but a professional practitioner should undertake such a task. To meet the symptoms of the malady as they appear in their protean form, in accordance with the general laws which govern the human body and the preacquired knowledge of the many agents employed as medicines, is the problem, to solve which is not a little perplexing for the most accomplished physician.

Thence the wisest counsel which can be given to the family, friends or charitable attendants of any person apparently laboring under an attack of Cholera is:—Send for the physician!

But there are many people in the new settlements and in the backward parts of the country, (and the case may also happen in older and nearer parishes and townships), who cannot obtain the advice or ministration of a physician, and there are a great many more, who by no possibility, can procure such help in time, for these parties some advice may become of great value, if not in teaching what is to be done at least in warning them of what they ought not to do.

In the preceding section the prophylactic and primary treatment of *premonitory symptoms* or incipient Cholera has been described and such treatment, in the total absence of a physician or while waiting his arrival, can be undertaken by any intelligent person, and is to be resorted to without fail: but now we have to deal with the confirmed malady, when the symptoms have changed and when the disease is undergoing a rapid succession of phases, calling consequently for a succession of modes of treatment different from one another.

In the absence of a physician, then, the four stages of Cholera may be treated in the following manner. At the period of *invasion* and during the following period of *collapse* the external measures recommended for *premonitory symptoms* are to be continued, that is to say, keeping the sick in a recumbent position, in bed, between woollen sheets or blankets, dry and warm—frictions under the bedding to avoid the action of cold air, the use of hot bricks, sinapisms, turpentine stupes and other stimulating agents not however carried to vesication or blistering the skin—in one word, appliances to the surface of the body to restore animal heat.

At this stage ordinary stimulants may be used internally to endeavor to revive the pulse and powers of the organization generally.

The period of *reaction*, when well characterized by subsidence of the worst symptoms and not accompanied with congestion, requires no special treatment.

In case of sign of congestion and non reappearance or continuous scarcity of urine, the only remedies which can be attempted without danger by a stranger to medicine, would be the warm foot bath, friction with mustard or other rubeficient to the feet and calves of the legs and diluent drinks like linseed tea not too thick, poultices in the region of the kidneys (or hollowed part of the back) in order to restore the urinary functions.

Congestion may be detected by non medical attendants sometimes by noticing an extra turgescence and redness of the face, if the head is threatened, or by a sensation of fulness if another part is the seat of the rush of blood, an increased anxiety in both cases.

If the period of *termination* is accompanied with no unfavorable symptoms, and if the urinary functions are well established, the better plan is to let the patient alone as far as medication is concerned, and to begin feeding him gradually—but if symptoms of a typhoid type supervene, which may be noticed principally by the oppressed aspect of the patient, anxiety, unsteadiness, and a somewhat stupid appearance of countenance, accompanied or followed by delirium: some stimulants in small quantities are to be given to the patient, and beef tea administered to him, as exhaustion and want of action is generally the cause of the complication at that period of Cholera. Of course such remarks are only intended for the guidance of people in the absence of medical attendance.

To attempt more than such a simple treatment carried out with care, attention and perseverance would be, to say the least, risking a good deal.

A precept to be invariably followed is to leave the sick entirely to nature's care, rather than to try drugs and remedies, the effects and results of which are almost perfectly unknown and at unascertained periods of the malady.

It has been thought a duty not to close these remarks without touching a point of great magnitude as well as of great delicacy, that is, in case of the actual death of a pregnant woman the Cæsarean section ought to be performed, if allowed, by the family; although there is probably very little chance of saving the child, for the reason that no harm is done on one side, and that a great result may possibly be obtained on the other.

A SERVICE TO BE RENDERED TO SOCIETY.

Medical science being founded in a great measure on the study of facts grouped together, the importance of collecting the facts connected with the lamentable events of such a noticeable character as the passage of Cholera in a country become self evident. Unfortunately very little has been recorded of the statistics of former epidemics in Canada, and this very little even can only be gathered by the very tedious, imperfect, and not very reliable mode of collecting

them from the several newspapers of the time, with the exception of some interesting official reports and papers, which are, however, limited to special points.

If Canada is again visited by the threatening scourge, precautions should be taken that the experience acquired during its prevalence be not lost to science.

Statistics ought to be collected by local Boards and directed to the Central Board. Even the most limited fields of observation are very apt, when brought together, to throw light on a subject of such interest. It has been ascertained in some European countries that the observations made in small localities, when collected by men of real tact, have a particular interest, being generally more accurately made. The officers charged with such labour in large cities are over-burdened with work, and not being so well, and often not at all acquainted with the persons and their circumstances, cannot sometimes give certain interesting particulars which are so easily ascertained in small places where everything is of public notoriety.

Blanks of a uniform plan should be furnished, to be filled by every clergyman, medical practitioner, hospital official, health officer, sexton and other persons connected with the service of the sick and dead.

The returns of sickness and death ought to contain, as much as possible the following information: the number of cases of real cholera and the number of cases of other diseases, the number of deaths from cholera and the number of deaths from other diseases.

The date of the attack, the date of recovery or date of death, the age of the patient and sex, his profession or trade, his general habits, his nationality, the duration of the ailment.

To these statements might be added any remarks the collector of such statistics could furnish, which would appear to him of any value.

Very interesting and very useful information could also be recorded; the way the cholera was introduced into the locality and the precise moment (if possible) of its appearance and disappearance; what was the dominant sickness before the appearance of Cholera, and whether sickness and mortality from other causes have decreased or increased during the prevalence of the disease, and whether they have kept away or returned back, as the case may be, after the disappearance of the scourge. The apparent effect of certain local influences and of the hygienic conditions on the malady, the description of the measures adopted for the prophylaxy or the mitigation of Cholera, and all other information in regard to the sanitary conditions of the locality as a whole, and of the dwellings and premises.

It would be very useful to collect thermometrical, and when possible, barometrical and hygrometrical observations made from day to day before, during, and after the Epidemic. A description of the locality; the quality and distribution of its waters, rivers, lakes, marshes, &c., and the quotation of number of cases and of deaths as compared with the geographical situation.

If such a mass of information could be accurately brought together, it would be paying to science and to mankind a tribute every country owes to the human confraternity, by not allowing to be wasted such dearly acquired experience.

J. C. TACHÉ,
Reporter.

Ottawa, Bureau of Agriculture,
March, 1866.

EDITORIAL DEPARTMENT.

A GOLD MEDAL FOR THE BEST FARM IN EACH JUDICIAL DISTRICT.

THIS, we propose, as the best means of encouraging our most successful and prominent agriculturists in the good work they are performing in the improvement of Canadian farming. This has been done in France with the best of results. Every year opens a new competition in each of the eight agricultural districts for the great prize offered for the best cultivated farm; and every year new exertions are made by those eager to win this prize—worthy of the ambition of all. Farm operations have been thus greatly improved. Herds of thorough bred cattle have been imported; farm yards have been built on the most approved plans; machinery of the best description has been introduced; orchards have been planted; drainage has been applied to wet lands. Irrigation now invi-

gorates the sun-burnt sandy soils. In short, through these district prizes, given to the most prominent agriculturists, French agriculture has been entirely revolutionized, with the best possible results for the country.

Several of the neighbouring States have adopted the same plan, with such modifications as circumstances may direct; and we propose the award of a gold medal every year for the best farm in each judicial district. Already county societies give prizes for the best managed farm in their limits; but the competition is not wide enough to raise the ambition of the most prominent farmers. We must widen the field to bring them in, and for that purpose, we would propose, that every county society in the judicial district should select their best farmers to contest for the district gold medal. The Board of Agriculture would then nominate an inspector, to report on the merits of these farms, and recommend the award which would be made by the Board, after full consideration.

To give an idea of what is done in the State of Illinois, in the same direction, we publish here the list of prizes offered for competition to the farmers of the whole of that extensive State. We would not propose just now such an extensive list, but only a gold medal for the best cultivated farm in each judicial district. The report drawn by the Board's inspector would certainly make a most interesting yearly volume, full of practical hints, taken on seventy-five of the best farms in Canada.

PREMIUMS TO BE AWARDED BY THE ILLINOIS STATE AGRICULTURAL SOCIETY.

Essays.

FOR the best approved essay on the preparation and management of a Stock Farm in Illinois, based upon the experience of the author, $25. For same dairy farm, $25. For same of grain farm, $25. For same of fruit farm, $25. For same on wool-growing in Illinois, including the preparation for, and marketing of the wool, $25. For same on manufactures in Illinois, facilities and necessity for their establishment with their relation to the agriculture and commerce of the State, $25. For the same on the planting and cultivation of forest trees, $25.

By Ladies.

For best approved essay on education of farmer's daughters, $25. For same on farmer's home, $25. All competing essays must be placed in possession of the corresponding secretary prior to the January meeting, 1867.

Field Crops.

For best field of fall wheat not less than four acres nor less than thirty-five bushels per acre, $75. Field of spring wheat, not less than five acres nor less than thirty-five bushels per acre, $75. Crop of Indian corn not less than five acres, nor less than 100 bushels per acre, $75. Crop of Barley, not less than five acres, nor less than twenty-five bushels per acre, $25. Rye, not less than five acres, nor less than twenty-five bushels per acre, $25. Oats, not less than five acres, nor less than eighty bushels per acre, $25. Buckwheat, not less than one acre, nor less than twenty-five bushels per acre. White Beans, not less than one-half acre, $25. Irish Potatoes, not less than one-half acre, $25. Sweet Potatoes, not less than one-fourth acre, $25. Onions, not less than one-fourth acre, $25. Hemp, one acre, $10. Flax, one acre, $25. Tobacco, one-half acre, $10. Clover Seed, one acre, $5. Blue Grass Seed, one acre, $5.60. Millet seed, one acre, $5. Flax seed, one acre, $5. Castor beans, one-half acre, $5. Carrots, one-half acre, $5. Field Beets, one-half acre, $5. Sugar Beets, one-half acre, $10. Swedish Turnips, one-half acre, $5. English Turnips, one-half acre, $5. Best one bushel Cotton seed, for culture in Illinois, and grown in this State in 1865, to become the property of the Society $10.

Best two acres of Cotton, the products to be gained and weighed, five pounds of the same to be on exhibition at the rooms of the Society during the January meeting, 1867, $100.

Best one acre of Sugar Cane, with statement of culture, yield and samples of stalk and seed, $25.

Statements to be furnished by applicants for Premiums on Farm Products.

1. The land shall be one contiguous piece, measured by a Surveyor, with chain and compass, who shall make affidavit of the accuracy of the measurement and quantity of the ground.

2. The applicant and one disinterested person shall make affidavit according to the forms annexed, to the quantity of the grain raised on the ground entered for premium, which, together with the sample of the grain must accompany the statement required.

3. The object of the Society being to promote profitable cultivation, they do not

propose to offer premiums for crops produced by extravagant expenditure; therefore a detailed certified account of expenses of cultivation must be made. The expenses of labor and manure should be particularly stated, and the kind of manure used. The statement must be in the following form:

To — loads manure, at $—per load..$—
To — day's plowing, at $— per day...$—
To — day's harvesting, at $—per day.$—
To — day's marketing.....$—

And thus each item of expense, incurred in the cultivation and the marketing of the various crops, upon which premiums are applied for, must be fully stated, and after giving credit for the product of the field, the balance must show the nett profit realized.

4. The kind and condition of the soil; the quantity and kind of seed used; the time and mode of putting it in the ground, should be particularly stated.

5. Samples of grain and vegetables produced, to be sent to the rooms of the Board at the January meeting, in 1867, for gratuitous distribution, and for the museum, in quantity as follows:

Wheat, corn, rye, oats, beans, potatoes, buckwheat, carrots, beets and turnips, one bushel each; onions, one-half bushel; flax seed, one peck; millet and castor beans, four quarts each; hemp, flax and tobacco, five pounds each.

6. All the grain on the entire piece of land measured, except corn, must be weighed, *and not the product of a square rod or two weighed or measured, and the remainder guessed at.*

The yield of corn to be determined as follows:

An average row (in length and yield) on each end of the five acres to be husked and weighed in the ear, after the 15th November, and the whole number of pounds thus ascertained to be stated in the affidavit.

Forms of Affidavits.

——— county, ss. A. B., being duly sworn, says he is a surveyor; that he surveyed with chain and compass the land upon which C. D., raised a crop of —— the past season; that the land is one contiguous piece; and the quantity is —— acres, and no more.

A. B., *Surveyor.*

Sworn to before me this ——day of—— 18—.

— — ———, *Justice.*

——— county, ss. C. D., being duly sworn, says that he raised a crop of —— the past season upon the land surveyed by A. B., and that the quantity of grain grown thereon was —— bushels, determined by actual weight at the rate of —— pounds to the bushel; that he was assisted in harvesting and measuring by E. F.; that the statement annexed subscribed by this deponent, as to the manner of cultivation, expense, &c., is in all respects true, to the best of his knowledge and belief, and that the sample of grain exhibited is a fair average sample of the whole crop. C. D.

Sworn to before me this —— day of——, 18—.

—— ———, *Justice.*

———, county, ss. E. F., being duly sworn, says that he assisted C. D. in harvesting, getting out and measuring his crop of ——, referred to in the above affidavits; and that the quantity of grain was —— bushels, and was grown upon said ground, as stated in the affidavit of C.D. E.F.

Sworn to before me, this ——day of——, 18—.

—— ———, *Justice.*

Farms.

Entries may be made at any time during the year.

Best improved and highly cultivated farm, not less than one hundred and sixty acres, $75. Best improved and highly cultivated farm, not less than forty acres nor more than one hundred and sixty acres, $75. Best arranged and most profitably managed Dairy Farm $75.

Each exhibitor must prepare and file with the Corresponding Secretary, before the January meeting, 1867, a statement embodying the following facts and items:

1. Locality, (township and county.)

2. Diagram with explanations, showing, 1st, The number of acres cultivated. 2d. The number of acres in pasture and meadow. 3d. The number of acres in timber. 4th. Divisions of fields, and kinds of fences, the roads and water courses; each field designated by a number.

3. Character of soils and subsoils, whether drained; and if so, when and how.

4. A clear, succinct account of his mode of farming, rotation of crops, breeds and number of stock produced and handled; how, when and where the products of his farm are usually marketed; the principal implements used in his culture and harvesting of crops; amount and kind of labor em-

ployed and a particular statement of his entire farming operations for 1866, showing the profit and loss on particular crops and products for the year.

The whole to be verified by affidavit of exhibiter.

From exhibiters of dairy farms, the following additional particulars will be required :

1. What is believed to be the most productive and profitable grass for hay. What for grazing, and what for soiling.

2. The mode of cutting and curing hay.

3. What breeds or crosses are deemed the best milkers.

4. Winter feed and care of stock.

5. Summer feed and care of stock.

6. The process of making and curing cheese, including a description of mode of preparing and using the rennet; daily weight (if known) and treatment of the milk; apparatus used; weight of daily product, process of manufacture; packing and marketing.

7. Butter—how, when, and in what quantity made.

8. The consumption of the whey, and value of the same for feeding swine.

9. Samples of the cheese and butter to be exhibited at the winter meeting of the Board, 1867, to wit :

Five pounds of butter made the first week in each month, from May to September, 1866.

One hundred pounds of cheese made any time during the season.

Market Gardens.

Entries may be made any time during the year.

Best arranged and cultivated market garden.....$20.00
Second premium..... 10.00

Each exhibiter must file with the Corresponding Secretary, prior to the January meeting, 1867, a statement, embracing information on the following points :

1. Location, (county and township.)

2. Number of acres cultivated in 1866.

3. Character of soil and subsoil, and their preparation before planting; if drained, how.

4. Leading varieties of vegetables grown, with their yield per acre in bushels.

5. General management and rotation of crops.

6. Manures—their cost; how and where procured; quantity per acre; how and when applied.

7. Where the products were marketed, and what the net revenue per acre, after deducting cost of labor employed in producing and marketing.

To be verified by affidavit of exhibiter.

Nurseries.

Entries may be made any time during the year.

Best arranged, cultivated and managed nursery of fruit and ornamental trees, shrubs and plants..$25.00
2d premium..... 15.00

Each competitor must file with the Corresponding Secretary, before the January meeting, 1867, a statement, embracing full information on the following points :

1. Location, (county and township.)

2. The number of acres devoted to nursery purposes each year, commencing with the establishment of the nursery.

3. Character of soil and subsoil, with the usual preparations of some before planting.

4. Leading varieties of fruit trees grown, with details of mode of propagation most esteemed for each.

Culture and treatment of leading sorts after planting until ready for market; manures—what, when and how used; pruning and training—how and when done.

6. Where products have been usually marketed.

7. A diagram showing internal arrangements of the nursery grounds, with reference to roads, walks and blocks for the current year, 1866; each block to be so designated by a number, with explanations accompanying.

8. If evergreens are cultivated, their mode of propagation and after treatment.

9. What branch of the nursery or what specialty has in general yielded to exhibiter the largest revenue in proportion to the cost of propagation and marketing.

Artificial Groves.

To the individual who shall plant or transplant, during the spring of 1866, the largest number of trees into an artificial grove—the number to be counted and certified to after the 1st of October next by the clerk of the court of the county in which the grove is situated, and no trees to be included in said count except those which shall be then alive and uninjured.$1.00
2d premium..... 75
3d premium..... 50
4th premium..... 25

This shall not exclude from competition trees bearing nuts in cases where the nuts

were planted during the fall of 1865. Statement must be furnished in every case of the character of the soil and subsoil, with means used to prepare them for planting.

Exhibiters must also state the time when the seeds, nuts or trees were planted, the distance apart, treatment, training, pruning and general management and after culture.

A verbal statement of varieties and number of each planted, area covered by the plantation, age and growth, must accompany each entry.

Orchards.

Entries may be made any time during the year.

Best Apple Orchard, $25; Best Pear Orchard, $25; Best Peach Orchard, $25;

Samples of the fruit grown, then in season, must be exhibited at the Society's rooms, during the January meeting, 1867, prior to which each exhibiter must file with the Corresponding Secretary a statement, embracing full information upon the following points:

1. Locality, (county and township.)
2. Number of acres in orchard.
3. Varieties of fruits grown, with names of sorts.
4. Product in bushels, with market value of fruit grown in 1866.
5. Character of soil and subsoil, with account of means used to prepare them for plainting.
6. When planted, distance apart, treatment, training, pruning and general management and after culture of trees.
7. Method of preservation and marketing of fruit preferred by exhibiter.
8. List of such varieties as have proven the most profitable for market.

To be verified by affidavit of exhibiter.

Draining.

Entries may be made any time during the year.

For the best experiment in underdraining during the year 1866, not less than forty acres.....$50.00

Statement to be filed with the Corresponding Secretary, prior to January, 1867, showing:

1. Situation and character of the land, (whether prairie or timber,) and description of soil and subsoil previous to commencement of process.
2. Methods pursued, with particular account of the expense per rod.
3. The result and increased value of the land, if any portion has produced a crop, during the year.

RULES FOR HEALTH.

THE following rules are from the *Phrenological Journal*, devoted in part to health, on the water-cure system:

1. Rise early. Wash the entire person in the morning. Vigorous friction of the face, neck, feet and hands, and of the whole body, after the daily bath. —This may be done with the hands, and by using a moderately coarse towel.

2. It is better to wash carefully and with energy on rising, that the impurities which have collected upon the surface of the skin during the night—for when the body is at rest, renovation is most active—may be entirely washed away.

3. On rising, and before bedtime, the whole body, while undressed, should be rubbed with the naked hands for about five or ten minutes, until a regular glow is produced. This, in addition to the friction after the bath.

4. A tepid bath should be taken daily by invalids; the best time will be in the afternoon.

5. Breakfast according to taste—mutton chop for beefsteak, corn bread, butter, and milk; but one need not restrict one's self to these. The corpulent had better follow Mr. Banting's advice in this particular, and, in fact, in all that relates to diet. The lean are urgently advised to select such articles of food as shall furnish them with the largest quantum of carbon, and at dinner especially to make a free use of bread and vegetables. This will assuredly lay the foundation, if anything will, of a good constitution. It may be remarked, by the way, that the notes on plumpness of form have been written solely for the comfort and consolation of the lean of humanity.

6. Open your window from six to ten inches at top and bottom at night, and throw it open in the morning to purify the room thoroughly. Every sleeping room ought to have an open fireplace in it, through which to ventilate it.

7. Rinse the mouth, and clean the teeth with a brush, a very little fine toilet soap, in soft water, on rising and before bedtime. Use a quill for a toothpick. This will keep them white, and preserve them from decay.

8. Avoid abuses that effect the nervous system.—Use no tobacco nor alcoholic stimulants; for the frame suffers from every excess, no matter how slight it may be, sooner or later.

9. Go to bed early, and don't *think* when once under the clothes. If you have

abstained from stimulants, and have exercised moderately during the day, you will surely sleep well at night. Wash the face and hands before retiring to rest, for it has the effect of calming the mind and inducing healthy repose.

10. If you are desirous of seeking health and vigor, make rules for your own guidance with respect to diet, bathing and exercise, and keep them as religiously as if they were laws. Above all, cultivate trust in Providence, and perserverance. Habits once formed are mental bands of iron that take years and years of labor to saw asunder. Remember that the physiological laws of life and health are God's laws, and *must* be obeyed.

EXAMINATION OF PUPILS ATTENDING THE UPPER CANADA VETERINARY SCHOOL.

THE final examination for the granting of diplomas to the pupils attending this school, was held on Tuesday the 26th of March last, within the Agricultural Hall, corner of Yonge and Queen Streets, Toronto. Three students presented themselves for the certificate of the Board, having attended the prescribed number of sessions entitling them to an examination for a diploma. We have already stated in a former number of our Journal, that before a student is eligible for examination he must, at least have attended the Veterinary School for three winter sessions, and at the same time must satisfy the teachers thereof that he has seen a certain amount of practice with a qualified veterinary surgeon. The session commences in the middle of January, and for professional students, extends to the end of March. In addition to this course, Mr. Smith has a class for dissection and anatomical demonstrations, commencing the 1st of November and lasting for one month.

The examinations were conducted verbally similar to the examinations at the London and Edinburgh Veterinary Colleges, and the subjects on which they were examined were as follows: The anatomy and physiology of the horse and other domestic animals; the diseases of the horse; chemistry and veterinary materia medica. The three gentlemen who went up for examination, and were successful in obtaining the certificate of the Board of Agriculture declaring them qualified to practice the veterinary arts in Canada, were Robert Robinson, Tullamore, county of Peel; William Elliot, Sandhill, county of Peel; and George Kempchell, Vaughan, county of York.

The board of examiners consisted of Mr. Merrick and Mr. Walters, veterinary surgeons Royal Artillery; Mr. Hume, veterinary surgeon, Hamilton, and Dr. Lizars, Toronto; together with the teachers of the school, viz. Mr. A. Smith, V. S. lecturer on anatomy and diseases of the horse. Mr. D. M. McEachern, V. S., lecturer on materia medica. Dr. Bovell, and Professor Buckland, of University College. At the close of the examinations Mr. Merrick congratulated the several candidates on the successful manner in which they comported themselves during a very stringent examination; and the answers elicited shewed a great amount of careful study; alike creditable to the pupils and to the teachers of the school.

We are glad to think that the efforts of the Board of Agriculture to establish a Veterinary School in Upper Canada has been so far appreciated; and that three more practitioners have been added to the profession in this country. Although the school may be said to be in its infancy, eight pupils have attended the classes this winter, with the view of ultimately following out the profession. A number of agricultural students during the past four winters have regularly attended the various classes, and have also been the means of disseminating some useful knowledge regarding the management of our farm animals in health; and also their treatment when labouring under disease. The value of stock in Canada is yearly increasing, and the want of competent veterinary surgeons is now more felt than it was ten or fifteen years ago, when both cattle and horses were only about one-third of their present value. We are confident that hundreds of animals die annually from the want of proper treatement when attacked with disease; or it may be from too much treatment. Animals when suffering are often subjected to the most barbarous treatment, by the host of pretended horse doctors who swarm our country towns and villages, nostrum after nostrum being administered with the view of curing, and which in too many cases but aggravates the complaint.

It is more difficult in many cases to detect disease in the lower animals than it is in man; because, in man the physician is materially assisted by questioning his patient. In the dumb animals, the veterinary practitioners can only judge of the state of

their health by a physical examination—therefore the greater need of a proper system of training.

We trust that the laudable efforts of the members of the Board in furthering this profession, will meet with the encouragement which they deserve; and that many of our young farmers will embrace the opportunity of acquiring a knowledge of the anatomy and diseases of farm animals, in connection with the study of agriculture.

IMPORTATIONS OF STOCK.

WE learn that Mr. Simon Beattie, of Markham, has recently sold to the Richmond County Agricultural Society, C. E., his thorough-bred blood stallion, "Star Davis, Jun." He is a fine large horse, of good colour, great bone and muscle, and is just such an animal as a county society should possess. From his high breeding, good form, and fine moving action, farmers cannot fail to obtain a useful class of horses from him. This is the second importation this society has made from Mr. Miller and Mr. Beattie.

Mr. George Miller, Markham, has sold some fine Leicester and Cotswold sheep to Judge N. L. Chaffee, Ohio; R. A. Alexander, Esq., Mr. Shropshire, and Mr. Clay, Kentucky. Some of these fine animals have already distinguished themselves at our last Provincial Fairs in London, and at Montreal, as well as at the State Fairs of Pennsylvania, Ohio, and Kentucky. Mr. Geo. Miller is fairly entitled to the first place among the importers and breeders of long-woolled sheep in this Province.

Mr. Simon Beattie, during a recent trip through Ohio and Kentucky, purchased a bull and three heifers from Mr. Clay, of the latter State. The four animals are all red, and are, we understand, deep in the Duchess blood. We hail with pleasure the arrival of these animals among us. Nothing will more improve the breed of our cattle, and increase the profits of our farmers, than the use of pure bred sires.

THE FUNK PROFESSORSHIP OF AGRICULTURE.

The Bloomington Pantagraph says the Funk family have contributed $10,000 in addition to the $1000 before given by Mr. Funk for the endowment of the Funk Professorship of Agriculture in the Wesleyan University at Bloomington. This is a generous contribution, and we congratulate the institution upon its good fortune. It is an example that we doubt not many of our wealthy agriculturists will follow when once the Industrial University is established.

BREEDERS' DEPARTMENT

HOW TO RAISE GOOD COLTS.

IN the first place, have a good mare of mature age, (five to seven years old, according to the breed); sound, having a good constitution and ancestry; black or bay, with ancesters same color, and no white feet; large, weighing not less than 1000 pounds in January; deep and broad through the pelvis, and rather small in girth around the chest, indicating good milking propensities; broad and muscular legs, round and perfect feet, high and thin withers, prominent eyes, wide apart, good life, action, speed, disposition, &c.

In the second place, cross her with a sire of the same general characteristics, except that he should be heavier forward and lighter through the pelvis. If the mare is too long-bodied and short-legged, cross with a sire rather the reverse, i. e., having too short a body and too long legs, and so remedy any defects that the mare may have, on the principle that "like begets like."

Be sure and remember this one thing, that if the mare is not a "good milker," it is useless to try to raise good colts from her. Good horses may be raised from a "poor milker," or rather, colts, that eventually become good horses; but as nature provided but one chief food for colts, if they cannot get that, they cannot thrive, but will only stay along till they become old enough to thrive on other food, which is so late that they rarely ever attain to what they would have been.

The mare may be worked during pregnancy, regularly or otherwise, if not strained, heated, overdone, or exposed to take cold; she should have what good hay in winter she will eat up clean, and two to four quarts of oats or equivalent per day, and more when at regular work, if she will not keep in good, everyday order without. She should not be turned directly from

winter feed into a pasture of very good feed, but better for a few days be put where the feed is rather short, and she should have grain also for a week or two, till her system gets adapted to the change of feed; and she should be "put up," every cold and stormy night.

From the middle of her eleventh month, she should be noticed every day, and after milk is seen on the ends of her teats, she should be seen every hour, as for the want of ten seconds' care, just at the time, many colts have been lost by suffocation, the case not giving way soon enough. Keep the dam on rather light feed for a few days, till danger from inflammation has passed, after which she should have good pasture feed, water and salt, and not much work; especially be careful not to heat her, or fatigue the colt, by long or fast drives, or from work in hot weather. I ruined one valuable colt in that way.

If not very necessary to use the mare quite constantly and hard, let the colt suck four and a half to five months. Before weaning, for a week or two, begin to learn him to eat a handful of oats, meal, roots, &c., per day, and after weaning, give him a few each day—from half a pint to a quart of each. He should be haltered before weaning, handled kindly, but in such a manner that he will always understand that his master is the strongest.

My mares—black, 10 years old, and weighing about 1125 lbs.—work enough on the farm, road and treadwheel, to well pay for their keeping, besides raising two as good colts yearly as can be "scared up;" but if they were crossed with some little, gnarly scrub that could "trot all day in a half bushel," and half starved and worked to death—and if they were spavined, ringboned, or had the heaves, the footing up would be very different.

"What man has done, man may do," and it is high time that raising colts from unsound, laid-by, little, lazy, good-for-nothing mares, was done with; also, trying to raise colts on the "starvation principle," i. e., working the dam unreasonably, and feeding her with "post meat," as though she had a machine that would make good colt food and plenty of it, whether suitable materials, and plenty of them, were furnished her or not! Many colts weigh as much at four months old old as at twelve months, for want of suitable food and care from and after the weaning time, by which they become poor, lousy, and unhealthy, and are as good as spoiled for life. The "common sense" which God gave man, if allowed to act, would teach him better; he don't expect his corn to grow without suitable food, care, and attention; why then his colts?

A proper colt weighing one hundred pounds when dropped, with proper treatment will gain one and a half pound per day the first year, three-quarters of a pound per day the second year, three-eighths of a pound the third year, and so on till maturity. Extra colts will gain more with the same proper treatment, "Victoria" having gained more than three pounds per day since she was dropped; so, per contra, inferior blooded colts, with the same treatment, will scarcely gain one pound per day for the first six months.

The great demand for good horses of good size, &c., that exists, ought to lead those who attempt to raise them to try to raise such as will answer the demand. There are plenty of the small inferior horses that Uncle Sam left, but such as he took are and must be very scarce for several years. While good horses may be raised at a good profit, poor ones can only be raised at a great loss.

WHY ALL FARMERS SHOULD KEEP SHEEP.

A RECENT number of *The Mark Express* says:

"The experience of the advanced agricultural nations, like England, Germany and France, goes to show that sheep are a necessity of a good general system of husbandry, on even the highest-priced lands, and mid the densest population. They afford as much food to man, in proportion to their own consumption of food, as any other domestic animal."

In America, we are satisfied that a farmer can produce meat for his own use, or for sale, by growing sheep, such as produce wool, with the greatest economy of cost, at less cost than with any other animal that feeds upon the product of manual labor. It is true that pork, produced by hogs in a semi-wild state, costs less, but that is nothing to the question. The great matter is to improve the farm for all other purposes, by keeping sheep. The experience of other nations has proved that.

One carping critic, upon what we have frequently recommended, says "he does not understand how it is to improve a farm, to have it continually gnawed bare of grass by sheep."

Nor we either. Nor do we understand how any man, with sense enough to tell a sheep from a jackass, can suppose that, in recommending sheep husbandry, we intend that farmers should so overstock their land that it would be gnawed to death, which would not only kill the land but the stock, and its owner. Such farming is not the sort that we recommend.

HORSEMANSHIP.

PREVIOUS to mounting, says a writer who is competent authority, a good horseman will be seen to view his horse with a searching, yet perfectly unaffected glance, and fondling his horse as if to conceal his object; he almost imperceptibly, will pass his fingers under the curb chain, or between the girth and the horse's skin, with a view to ascertain their proper tightness, for the latter may be too tight at starting; and a horse will go fretfully as long as the former is too much curbed. His very manner of placing the reins between his fingers, and laying hold of the mane lock, will tell you at once whether he is at home or not; for he will do all this, as also mount, devoid of all embarrassment or bustle, thereupon to ride his horse away in a walk, and with perfect ease, which is inseparable from true elegance, and therefore not only distinguishes the riding of a gentleman, but also clearly proves his familiarity with the exercise.

Beware of falling into the mistake of marking him down as a novice, merely because you may see him mount or dismount on the "off side;" for it requires a thorough horseman to practice mounting and dismounting on either side; and may such a one not have reasons for preferring the "off" to the "near side?" But when you see a dismounted rider (one that is not compelled to do so by some hurt) shuffle about or shift his horse about, or when you observe his cutting unnecessarily at his horse, and generally hide (as he flatters himself) his own blunders or awkwardness, if yon see him clamber up as if his foot was on the round of a ladder, either to lay his chest on the pummel, or to swing himself into the saddle afterwards like a sack, and if he allows the horse to walk off with him before he has fixed himself properly in his seat, then you may make sure that he is an awkward or a new hand. Most of these will mount and start off immediately, at a full gallop, or at a round trot, no doubt pleasing themselves with the idea that everbody must be convinced by such a style of riding that they are "capital horsemen;" that is, if sticking fast (but any how) to the saddle can make them so, in the absence of all other claim.

Having finished my critique as to horsemen and drivers, I feel the difficulty of instructing you how to know a really good good horse; wherefore, and as the subject is fully and very ably treated in so many publications, I will content myself by tendering you the copy of some ancient, but befitting verses, for I, too, say with that poet, give me a horse that

"In shape, in courage, color, pace and bone.
Excels a common one;
Round-hooted, short-jointed, fetlocks shag and long,
Broad-breast, full eyes, small head, and nostrils wide,
High crest, short ears, short legs, and passing strong,
Thin mane, thick tail, broad buttock, tender hide."

PARTURIENT COWS SHOULD BE TIED UP.

SOME three years since it was suggested, at one of our farmers' meetings, that it was better for cows during parturition, to remain in their stables and tied in their usual way. It was a novel idea to most of us, and but favorably received by few, myself among the number, the reason assigned appearing rational, some of which were, that when the cow is loose in a yard or stable she is liable to rub injuriously againt the fence or wall of the apartment, in so frequently turning around, which no precaution can prevent; that cows in that state are sometimes very cross, so that it is very unsafe to approach them, except they are tied. One of my neighbors was so hooked, torn and trampled upon by his old family cow, immediately after parturition, a few years since, that he died in a few hours. Another neighbor narrowly escaped with her life, through the interference of a strong man. Many cows seem to be insane —almost mad—at such times, so that they don't seem to know what they are about.

I was brought up to suppose that cows must *surely* be let loose at such times, or they "would not do well," and I suppose that is the general opinion through the country now; but for the last two years I have kept my cows tied up, and they have all "done well," and I never intend to allow one to be loose at that time again.

While attending Mr. Peters' auction of Apshires last spring, and looking over his spacious and convenient barns, comfortable cow stalls and novel mangers, with running water before each one, &c., I saw one or more box-stalls for parturient cows, with

clean and fresh bedding a foot deep there in and a calf three days old, valued at over $100, half buried thereby! It looked almost as comfortable as the best accouchment room—but I couldn't help thinking that it was nevertheless a great mistake. The *trouble* and *expense* of such accommodations for several days, and perhaps weeks, (as the time of pregnancy with cows varies much,) must be many times more than when the animal is kept tied in the usual manner, besides the other objections.

It seems specially desirable that *heifers* and *young* cows should be tied on those occasions, on account of the *novelty* of the event. Seeing a calf suddenly about them, they not unfrequently seem to mistake it for a dog, jump at it, and bellow so as to be heard a mile. In such cases, if they are not tied, it is impossible to get the calf near enough to its mother to suck.

I do not tie any stock in "*stantials*," but I know of no valid objection to keeping cows tied with chains or ropes at this time. Several have tried it here for two or three years, with no evil results, and I am told many of the best large dairies, of forty and one hundred cows, in the northern part of Vermont, have so done for several years, and if they find ten or a dozen new calves among the cows at night or morning, they are all right, the cows being kept well bedded.

I am not at all certain but the same method would be best for *mares*;—unintentionally tried it once, with good results.

DEVON HERD BOOK.

WE have received a circular stating that the Committee on Devon Pedigrees, appointed by the Association of Breeders of Thorough-bred Neat Stock, have decided to publish the Second Volume of the American Devon Herd Book early in the year 1867; or as soon as a sufficient number of Pedigrees are received. The First Volume, published in 1863, contained over 500 pedigrees. To accomplish this object, and to secure as full returns as possible, the Committee respectfully ask the co-operation and influence of all the breeders of Devon cattle in America. No pedigrees will be inserted other than those of pure bred animals. No pains will be spared by the Committee to examine each *pedigree* offered for approval, and, by comparison of pedigrees from different sources and correspondence, to clear all doubtful points. Any person desiring to record the pedigree of animals can do so by the payment of 50 cents for each pedigree offered for inspection. All pedigrees for publication must be accompanied with the fee, and forwarded to H. M. Sessions, *Editor of the American Devon Herd Book, So., Wilbraham, Mass.*, on or before the 1st of December, 1866.

IMPORTATION OF STOCK BY THE NOVA SCOTIA GOVERNMENT.

Attraction.

A bay mare, bred by Mr. J. Johnstone in 1861. Dam, *Helen Faucit*, Sire, *Newminster*.

Duchess.

A trotting mare.

The mares Lurline, Overcast, and Attraction, are all in foal to Diophantus, a chestnut horse bred by Her Majesty the Queen in 1858, got by Orlando, his dam, Equation, by Emilius out of Maria.—General Stud book, vol. x, page 105.

Diophantus gained the second prize of £50 stg., among thorough bred stallions at the great horse show at Agricultural Hall, London, in July, 1865.

The Sheep.

The sheep are of the "Improved Leicester" breed, and consist of five yearling Rams, five yearling Ewes, five Ram lambs, and five Ewe lambs.

They were purchased from Mr. R. W. Creswell, Ravenstone, Ashby de la Zouch, one of the most successful breeders in England.

They are nearly all after a ram for which Mr. Creswell paid sixty-two guineas which this year won a first prize at the great annual Exhibition at Plymouth of the Royal Agricultural Society of England. And he is let this season for fifty pounds.—Not only is Mr. Creswell's flock one of the most highly prized in England at the present time. We are informed that the sheep farm of Mr. Creswell has been celebrated for Leicester sheep since the time of his grandfather, as far back as 1790, who hired rams for three successive seasons of John Stone for 300 guineas, T. Stone 200 guineas, and Stubbins 300 guineas, also one of Mr. White for 100 guineas.

Mr. Creswell was one of the two successful exhibiters of Leicester sheep at the Royal Agricultural Exhibition, the present year.

CAUTIONS FOR THOSE HAVING SHEEP.

THE following suggestions to those having sheep, are taken from a circular issued by the American Emigration Company, who own over 10,000 sheep, which are scattered among the farmers who have purchased land from them:

1. Keep sheep dry under foot with litter. This is even more necessary than roofing them. Never let them stand or lie in mud or snow.

2. Take up lamb bucks early in summer, and keep them up until Dec. 1st, following, when they may be turned out.

3. Drop or take out the lowest bars, as the sheep enter or leave a yard, thus saving broken limbs.

4. Count, every day.

5. Begin graining with the greatest care, and use the smallest quantity first.

6. If a ewe loses her lamb, milk daily for a few days, and mix a little alum with her milk.

7. Let no hogs eat with the sheep—by no means in the spring.

8. Give the lambs a little "mill-feed" in time of weaning.

9. Never frighten sheep if possible to avoid it.

10. Sow rye for weak ones in cold weather, if you can.

11. Separate all weak, or thin, or sick, from those strong, in the fall, and give them special care.

12. If any sheep is hurt, catch it at once, wash the wound, and, and if it is in fly time, apply spirits of turpentime daily, and always wash with something healing. If a limb is broken, bind it with splinters, tightly, loosening as the limb swells.

13. Keep a number of good bells on the sheep.

14. Don't let sheep spoil wool with chaff or burrs.

15. Cut tag-locks in early spring.

16. For scours, give pulverized alum in wheat bran—prevent by taking great care in changing dry for green food.

17. If one is lame, examine the foot, clean out between the hoofs, pare the hoof if unsound, and apply tobacco, with blue vitriol boiled in a little water.

18. Shear at once any sheep commencing to shed its wool, unless the weather is too severe, and save carefully the pelt of any sheep that dies.

19. Have some good work by to refer to at least; this will be money in your pocket.

RAISING POULTRY IN LARGE NUMBERS.

THE idea of raising poultry in very large numbers has great attraction for persons who have had but little practical experience in poultry breeding; and, in consequence, every few years some fallacious object is started for the establishment of a poultry farm. Not long since a paragraph went the rounds of the papers respecting the success of a large poultry establishment near Paris, where many thousands of poultry were said to be reared annually at a very large profit to the promoters. It will not surprise those of our readers who are practical men, to be told that the whole account was a pure, invention, there not being, nor ever having been, any such establishment in existence.

A few years since, Cantelo started a poultry establishment near Chiswick, and, although he had the advantage of great experience, and one of the best artificial incubators ever designed, the whole concern came to an untimely end.

During the time of the Cochin mania, when every Cochin hatched and reared had its value reckoned in pounds sterling, numerous speculators tried rearing in large numbers, but not one of them succeeded.

The Americans, who are at least our equals in poultry breeding, for practical if not for fancy purposes, have tried the plan repeatedly, and each time it has failed. Not long since it was worked in connection with the Astor House hotel, and the usual termination ensued.

There are two reasons for this inevitable result. One is, that when a large number of fowls are crowded together, or kept in one place, the ground becomes tainted with the manure, and disease invariably breaks out. This is more particularly true of chickens; for in every attempt to rear a large number in a confined space, the mortality is excessive. The employment of an incubator in this climate will always be found a failure, for this simple reason, that it is impossible to rear the chickens after they have been hatched. The hatching process is sufficiently easy; but chickens are of no value whatever without you have hens to brood them. The only manner in which an incubator can be usefully employed is by hatching an extra number of eggs, so as to give each hen a full brood of chickens. Used in this way, we have known small incubators very serviceable; but when employed to hatch chickens that are to be reared by artificial mothers, we have never seen them profitably used.

BEDDING AND VENTILATION FOR STOCK.

EVERY farmer should see to it himself, however trustworthy may be his boys or other assistants, that his cattle, sheep, horses and hogs are well bedded, as well as well fed and watered; also that his barn or barns where his stock are kept and fed, is or are well ventilated. Domesticated animals, as well as man himself, need fresh air, and when compelled to breathe a tainted and therefore an irrespirable atmosphere, it is at the expense or risk of health and the highest purposes which one has in stock breeding and keeping. Any observing farmer can tell on opening his barn in the morning whether the ventilation thereof is ample.—*Boston Cultivator.*

SHORTHORNS.

IN Britain, the Shorthorn may be found in its purity, as well as intermixed with other breeds, from the Orkneys to the Land's End; while on this continent, its dissemination and its increasing popularity are the certain accompaniments of improved agricultural practice. It is only necessary carefully to inspect the cattle at our great annual Provincial and County Fairs, or to mark the animals which furnish the beef for our cities, to be convinced that the Shorthorn is surely altering and improving the character of our cattle. A similar condition of things obtain in the Australian Colonies. The breed, therefore, eminently deserves to be denominated *cosmopolitan.*

There is something very enticing in a Shorthorn, and it is therefore not surprising that so many have been induced to become breeders. An indistinct notion would seem to exist on this subject, leading people to imagine that Shorthorn breeding is something which comes by nature, like driving a conveyance. Instead of this, it is one of the most intricate arts that any man can venture upon; we may almost call it a science, and it demands special qualifications in those who follow it, which are rarely combined in one individual. Hence, no doubt, the many failures; and hence also the brilliant successes which have attended the operations of certain breeders. Enthusiasm, judgment, energy—a power to discriminate between the precious and the vile—a determination to have females of good families, and sires of the best blood—a resolution to allow no parsimonious policy to mar success—are some of the prerequisites which the first-class breeder must possess. Some of the finest specimens of the Shorthorn race have been produced by men whose lot it was to live by farming; while, on the other hand, we know of magnificent animals having been bred by men to whom farming was a pastime and a parenthesis. Good blood is the grand desideratum—the great lever by which breeds are elevated and improved. It makes itself felt wherever it is and whoever uses it. It is independent of social position, and asserts its power, whether cherished by a tenant farmer, or patronized by a peer. Its tendencies, outwards and upwards, are inevitable.

With respect to nice grades in the Shorthorn breeds—to the relative merits and advantages of Bates blood or of Booth blood,—there will always be differences of opinion. Some breeders will believe in distinct sorts or types of Shorthorns, *because* they are distinct, and others will patronize sorts or types that are good, *because* they are good. The latter class are the most likely to shape the future character of our cattle; to modify existing materials, and to create, by the readjustment of established combinations, new orders bearing new names. These in their turn will be the favorites of the day, pale, decline, and in their turn give way to fresh favorites. Periodical changes have affected, and will continue to affect Shorthorn breeding, and fashion in Shorthorns, as well as every thing else.

Respecting the points of a Shorthorn, the following is the standard of one who is everywhere acknowleged as a first-rate judge—Mr. Douglas of Athelstaneford. To Shorthorn fanciers who are familiar with the splendid animals imported by the Hon. David Christie, from Athelstaneford, it is almost unecessary to say that the Douglas herd has attained a world-wide celebrity. Its proprietor thus enumerates the "points:"—"An animal of apparently small scale, but in reality not so, having a great propensity to fatten; on short legs, with fine bone; massive compact body; wide chest; ribs well sprung; thick loins, and well filled up quarters; with deep twist; body all equally covered over with heavy flesh, and plenty of soft hair, and having no coarse beef on any part." This is a faithful description of the leading characteristics of the animals composing the herds once to be seen at Athelstaneford. When Mr. Douglas, however, gave that description, he stated

he had in his mind's eye many of Mr. Booth of Warlaby's best animals. Warming with enthusiasm, he went on to say: "Look at the docile, even, intelligent expression of countenance; the waxy horn; moderately short neck; full neck-vein; prominent bosom; beautiful laid shoulder; capacious chest; ribs well sprung from the back; thick-fleshed, strong loins; deep flanks, huggins well covered; lengthy, well-packed hind quarters, with deep twist on straight legs; and fine bone. Such are nearly all the animals that constitute Mr. Booth's celebrated tribes, or families of Shorthorns."

We had something more to say, but the foregoing observations must suffice for the present.

ITALIANIZING APIARIES.

THERE is some interest manifested among bee-keepers to learn how apiaries can be "Italianized." We will explain the process.

It is not possible to keep Italian bees pure, only in localities where no native bees are kept within three miles; and as such places are very scarce, in the Eastern States, it follows that all persons in thickly settled places, probably, who procure Italian queens or stocks will have only *hybrids* in the end.

In the first place, when it is desired to Italianize a single stock, a pure Italian queen should be procured. Then the native queen should be found and removed, and the Italian queen substituted, and in a few months the entire family will become pure Italians;—that is, as the natives die and disappear, Italian bees will take their place. These bees will continue pure till the next season, when the queen sallies out with a swarm, and a young queen takes her place, which will leave the hive to meet the drones in the air, and they being *native* bees, she will be impregnated by them, and at once commence to lay eggs that will produce *hybrids*—half breeds—and the same season the whole apiary is liable to become hybridized, from the pure Italian drones reared in the hive where the pure queen was placed, meeting the young queens for the purpose of impregnation. Even all the bees in the neighborhood are subject to the same result; and the chances of becoming hybridized are greater, on account of the habits of Italian drones being more active than native.

In regard to the advantages of Italian over native bees, we require more experience in various localities, in order to decide the question correctly. The most of the articles that appear in the papers in their favor, are from men who have the bees for sale, and we do not consider their statements reliable.

BEES—PURCHASING STOCKS.

THOSE who intend purchasing stocks this spring, should be ready to attend to it as soon as possible after the first days warm enough for them to fly. It is a better time to select than before or afterwards. If the first day they fly is really warm, they often issue in great numbers; apparently get confused and enter the wrong hives; yet at this season seldom quarrel. Some stocks, by this means, get more than belongs to them, while others lack a corresponding number. Occasionally one will lose its queen during winter, and the bees will generally desert, joining some other stock on the first pleasant day. It is best to let those things get regulated. On the other hand, if left too long, until the bees have been out two or three times and marked their locality, it is an injury to move them, especially short distances. The idea that a bee knows its own home by instinct, or is attracted to it, as the steel to the magnet, and can readily find it, however much it may be moved about the yard, after its locality is once properly identified, is erroneous; yet if the removal is beyond their knowledge of country, the injury will be much less. Consequently this must be the best time to purchase.

I have seen bees enough purchased by those too eager to try their luck, to be pretty well satisfied that *all* buyers are not good judges of the article—they seem to misunderstand the requisites of a good stock of bees, supposing that more depends on luck than anything else; and if they get a stock either good or bad, and set it up, and if it does not prosper, "why bees will do nothing for them." When this has been the case, I would advise another effort, and suggest that they use a little care in making a selection of the first stocks, and try the efficacy of a little proper management.

In making a selection at this season, do not be anxious to get stocks that are heavy. Some few pounds of honey are sufficient to take them through the spring. If too much honey is present, there will be but little room to rear brood; it also indicates

that the colony is small, and have consumed but little through the winter. The amount of honey can generally be determined pretty nearly by lifting; the number of bees by actual inspection—not after they have been aroused, and all in commotion by an accidental jar, but by rising the hive so carefully that they know nothing about it, until the light is admitted directly between the combs till the cluster of bees is all seen. It may on some occasions be necessary to turn the hive over bottom up. The bees of a strong colony will extend through eight or ten combs; if less than four or five, it would hardly be suitable for a beginner at any price. While examining the size of the colony, it would be well to see if there are any mouldy combs, and if any clusters of dead bees are in any part of the hive. A small amount of either will not be a serious detriment, if all else is right, as it is easily removed. Also, if the hive should be an old one, there can be no better time to see if the brood in the comb is free from disease. The examinations are important and if they cannot be made without disturbing the bees, they may be quieted sufficiently for a partial inspection with tobacco smoke. If a pipe or cigar is used, it will do well enough; if not, a very good substitute is made by covering cotton cloth eight or ten inches square, with common smoking tobacco, one-fourth inch thick, and rolling it up loosely, and fastening with needle and thread, igniting and blowing the smoke among the bees, until they allow an inspection.

Young stocks, and swarms of last season, when they are to be had, are preferable for several reasons, but those two or three years old are not to be rejected, and if healthy, will be just as good for a year or two.

The size is also important. For sections north of 40 degrees, 2,000 cubic inches inside is a good standard; yet those two or three hundred inches larger or smaller, ought not to be refused on that account, as swarms can be put into hives the proper size. Very large hives are often cut off to the proper size, but as a beginner would not be likely to undertake it, it is unnecessary to describe the process.

To prepare them for transportation, spread down a sheet, and set the hive on it; then bring up the corners, and tie over the top, or invert the hive, and put over the bottom a piece of muslin eighteen inches square, fastened at the corners with carpet tacks. A wagon with elliptic springs is best for conveying them. In all cases the common box hive should be bottom up to avoid breaking combs. When moved late in the season, they should be set several feet apart. A bee-house is objectional on that account—hives are apt to be crowded. If any alterations are to be made about the yard the sooner it is done the better.

ENGINEERING DEPARTMENT.

TARRING POSTS.

WE wish to say a few words about preparing posts for planting in the ground. Having over one thousand to plant in our vineyard this spring, we concluded to have light white oak posts made from our own timber.

We set about gathering all the information possible from our agricultural journals (and we take eleven different ones regularly) about the best plan for coating them with tar; we have had it used as a preservative for a long time, but dreaded the sorry faces of our "hired men," should we require them to tar so many posts with the brush. We found various plans suggested, but none seemed practicable and thorough. We set to work to "contrive something," and you know women can plan sometimes, though they may be wanting in the *executive* power. The result of our plan is a sheet iron tank made of best material, forty-four inches deep and thirty inches in diameter, set upon an old rejected cook stove placed flat upon the ground for safety and convenience; this we had first filled with posts, tree-top end in the tank, then filled up to the top with tar, and then a fire built under; we have each tank full boiled about half an hour. The tank will hold about ten posts of the size usually bought of cedar; will hold twelve to fifteen of the size we had ours split; thus, two to three hundred posts may be boiled in a day; it works like a charm, and with much more satisfaction to the "boys" who have it to do, than the plan of applying it with a brush, or of putting the posts into a kettle and standing over the smoking tar

to "swab them above the ground line," as recommended by the American Agriculturist some time ago.

We have a grate made of oak sticks to cover the bottom of the tank, to save blows and bruises on the sheet iron bottom. We have a shallow box made tar tight, and large enough in surface to stand each tank full of posts into it to dip while the next tank is boiling. Our posts are from seven to nine feet long. To have them balance, or avoid any danger of tipping the boiler, we have a couple of posts set in the ground, and slats nailed across some feet above the boiler, for the tops of the posts to incline against. The wood becomes penetrated by the boiling tar, about one-sixteenth of an inch; in a few hours after its removal from the tank, the surface is dry and hard, and apparently as impervious to water as glass. The advantage of this plan, and the superiority of the work done by it, may be obvious to all who have given the subject any thought; those who have never tried other plans in use will not readily appreciate the difference. Here we have the posts thoroughly tarred to a point quite above the ground line, with one operation, and without the continued exposure of the operatives to the suffocating smoke of the tar. Indeed it would be impossible for any number of posts to be thoroughly prepared at one boiling, in a tank or kettle too shallow for the depth the posts must be planted in the ground. Some recommend putting the tar on with a brush, and then sprinkle well with sand, let it dry, and repeat the operation, &c.; if sand is any improvement, it can be readily sifted on to these as they come from the tank; probably less tar would drip off with this treatment.

Now, if any one knows of a better plan that has been tested, for the theoretical and practical plans are very different things, we would like to hear of it. In the absence of a stove, we should have a small brick furnace made.

Caution should be used that the tar does not run over, or in any way get ignited. It is well to place the work at a safe distance from the barn or straw stacks, or any combustible material, so that in case of any accident to the tar, no serious damage can result. MRS. F. A. W. S.

The duke of Devonshire's hot houses (75 in number) are heated by steam and hot-air, for which 600 tons of coal are burned annually.

GRAVEL HOUSES.

A CORRESPONDENT desires some information concerning gravel houses, so I comply, and send you what little experience I have had with them. At the present I am residing in a gravel house, and it is warm and dry, and, if anything, superior to stone or brick. I have assisted to rear two or three buildings of gravel, and have seen several in course of construction. They are built by means of boxes, made of plank 2 inches thick, by 14 inches in width, and 12 or 15 feet long. You place the planks on the foundation, about 9 or 9½ inches apart, securing the ends firmly by means of a link and two staples, and then fill in the gravel. In the commencement of the building, two courses can be put up in succession, which, after remaining two days, or more, (if the weather is fine and dry two days will do, but if not the planks will have to stay on until the wall is sufficiently dried to allow of their removal,) the lower course of planks may be taken off, and may be put on the top of the upper. Pieces of board about 2½ inches wide will have to be laid across the top of the upper course, for the planks to rest on when put up. Holes of about three-quarters of an inch in diameter require to be bored in the ends of the cross pieces, and pins inserted in such a manner that the pin will secure the lower edge of the upper plank, and the upper edge of the lower, which keeps the planks from spreading with the weight of the gravel in them. And so keep raising the lower course of boxes, and placing them on the upper, until the wall is as high as required. The roof of such buildings should project at least 2½ or 3 feet. In mixing your materials, a little care is required. The lime requires to be good, and the gravel sharp. About one bushel of lime to twelve of gravel is the proportion, but if the gravel is not good, a greater quantity of lime is required. One to nine or ten would not be too much. But a person wishing to build of such materials would do well to secure a man that has had some experience in building those sort of houses, as all depends upon the wall being constructed properly, and the materials being mixed in a proper manner.

Ploughs which have the lightest draught are not the best sod ploughs. To decrease the draught, a short mould board must be used.

PUTTING UP A CLOTHES LINE.

We always had so much trouble at our house on washing days to get the clothes line put up so as to hold the clothes until they were dry. We had a big nail driven in the post at the corner of the wood house, to which we tied one end of the line, then we took it to an apple tree, about four rods off, and gave it a turn around a limb, from there it was carried to the high post of the garden gate, and then brought back to the well curb. If it was a still, bright day, and the men folks were not at work in the yard, we got along well enough, but sometimes the winds would blow and flap the clothes about, and, being so far from the wood house to the apple tree, they would sweep the ground, unless we propped them up with a forked stick, in which case the whole stretch would sail over, just as a clipper's sail *jibes*, when the bow is brought into the wind's eye, as the sailors say; and after a few such summersets, the old line would give way, and let the whole washing down in the mud. Did you ever see a woman with a whole washing upset in that way? it's of no use talking to her then!

Another trouble was, that the line from the gate to the well curb was right over the path from the barn to the house, so that the men in passing with the horses generally left their mark upon the clean clothes. We worried over these annoyances a long while, until "forbearance ceased to be a virtue," for we were growing wickeder every week, and Pa said he would see to it as soon as he had time, but it seemed to us the *time* never would come; so when he went to Columbus to stay a day or two, we bribed Billy — a good natured fellow, who is half a carpenter— to make a nice revolving frame—two cross sticks like an X, with a hole for a peg at the crossing to fasten it flat on the top of a post in the ground. The post is about as high as our heads, and all along on the tops of the cross sticks are pegs like those on a bedstead, about a foot apart, to hold the line, which is run around from one to another, almost like a spider's web.

The arms of the cross timbers on our frame are about two yards and a half long from the post, and this will hold a large washing. When we carry out a basket of wet clothes we can set it down and hang one angle full, and then turn it around and fill another, without taking up the basket; and by hanging the sheets, &c., on the outside ropes, which are longest, we can get places for all, where they will not sweep the ground, or be in anybody's way; and by turning the whole once in a while, the sun will dry them all alike. Pa was a little surprised when he first discovered what we had done, but when he saw how much better natured we were on washing days, he said there was more morality in a good clothes line than he had imagined.

Hazel Dell, 1866. SUN BONNET.

BARN YARDS.

In the construction of a barn yard, many farmers seem to think that little, or no planning and skill is necessary. They generally build their barns without any regard to the yard, whether it is to be on the east, west, north or south side. The yard, however, is quite as important as the barn, and should be so situated that the manure in it will not escape, and run off, as is frequently the case, down some hill.

There are farmers who think that a stream of water, running directly through their barn yards, for watering stock, is a good thing, whereas it is the worst place for one that can be imagined, taking the saving of the liquid manure into consideration, as a large portion of it must, of course, find its way into the stream, and pass off where it does no good to any one.

A great desideratum, in constructing a barn pard, is the preservation of the manure; and for that purpose, it should be excavated in a bowl-like shape, on a gentle declination from the circumference to the centre, and the bottom made tight with clay made into mortar, while applying it, so that the liquids of the yard will not leach down into the subsoil and be lost.

Such a yard is an excellent receptacle for manure, where it may lie over a season, to ferment and decay, and be in good condition to apply to land.

Into such a yard a compost may be made to great advantage, by carting in muck, leaves, and anything upon a farm that may be gathered up to decay, placing such things in layers, and covering each with a layer of stable manure, all to be mixed by the tramp of cattle in the yard.

No farmer can put too much manure into such a yard, provided he keep it well covered with coarse litter, to prevent evaporation of the gases (ammonia) which are con-

stantly seeking opportunity to pass off into the atmosphere. These gases are to the manure what blood is to the human system —the life of them ; and to allow them to escape, is throwing away the foundation of all success in agriculture.

It is often said that manures keep best under cover ; but that is not the case, except in comparison with the ruinous practice adopted by some farmers, who throw their manure out of their stables into heaps, where the rains wash a large portion of their virtues away, where no good is done by them. Manure in a yard as above stated, when well covered with straw or other coarse litter, is actually *under cover*, and in a better condition than it would be under a shed, where it would be liable to injury from a lack of moisture.

Another important consideration, in constructing a barn yard, is the protection of stock from the cold north and west winds ; and the south side, consequently, is the best side of the barn to have it.

Stock that are well housed in winter, and have warm sheds to run under, when not in the stables, will keep in good condition on much less fodder, than when they stand exposed to the raw chilling blasts, from the north and west in the winter season ; and the owner actually saves about *one-third* of the fodder they would require, if turned into a yard facing the north or west.

Farmers, you should do more *hard work* than you are accustomed to do, if you would be prosperous in your business. It is not always the hardest *working* farmers who make the most money; but generally those who use their *brains* often, when their hands are idle.

WASH FOR ROOFS.

SLAKE lime in a close box to prevent the escape of steam, and when slake pass it through a sieve. To every six quarts of this lime, add one quart of rock salt and one gallon of water. After this, boil and skim clean. To every five gallons of this, add by slow degrees, three-quarters of a pound of potash and four quarts of fine sand. Coloring matter may be added if desired. Apply with a paint or whitewash brush.

This wash looks as well as paint, and is as durable as slate. It will stop small leaks in roof, prevent the moss from growing over and rotting the wood, and render it incombustible from sparks falling on it. When applied to brick work it renders the bricks utterly impervious to rain ; it endures as long as paint, and the expense is a mere trifle. N. E. FISH. *Muskegon, Mich.*

HORTICULTURAL DEPARTMENT.

CULTIVATE FLOWERS.

I would cultivate in children a love for flowers, and give them one to tend and care for, as soon as they are capable of doing it. It is a work that tends to beget kindness and tenderness of feeling, and will lead them to seek to be good and lovely, tender and gentle in word and deed. Who would indulge in *anger* among flowers?

Every *farmer's wife* should have a few plants, one at least, to cherish and love. It would lighten her harder labor, and relieve her greater care, and often sooth her perturbed feelings, to give it merely a look, a thought, and a draught of water in its need—to watch its growth and catch the fragrance of its opening petals. Perchance I hear one say, "I have no time to spend in that way ; I have to work, work, from morning till night, and go to bed with much left unfinished. Well, I know how that is, having had some experience in that line ; but the worst part of the matter is, that the spirit, the temper is so worried and fretted. By all means, calm that, though no work be done for a week ; attend to your flowers ; they have a soothing, calming influence. Your "husband doesn't know nor care how hard you work, or how tired " you are ? Well, he truly doesn't *know*—but then it is not likely he ever *will* know ; and this sin of ignorance in him had better be winked at, than fretted over. Again, I say, cultivate plants and flowers ; let no day pass without listening, quietly, attentively to their whispering voices, and in your silent communings with them, learn to

"Bless God for flowers,
For the bright, gentle, holy thoughts they breathe
From out their odorous beauty, like a wreath
Of sunshine to life's hours."

FLORA.

THE GARDEN.

THE garden is a bound volume of agricultural life written in poetry. In it the farmer and his family set the great industries of the plow, spade and hoe in rhyme. Every flower or fruit-bearing tree is a green syllable after the graceful type and curse of Eden.—Every bed of flowers is an acrostic to nature, written in the illustrated capitals of her own alphabet. Evey bed of beets, celery or savory root or bulbs, is a page of blank verse, full of *belles lettres* of agriculture. The former may be seen in his garden. It contains the synopsis of his character in letters that may be read across. The barometer hung by his door will indicate certain facts about the weather, but the garden, lying on the sunny side of the house, marks with great precision, the degree of mind and heart culture which he has reached. It will embody and reflect his tastes, the bent and bias of his perceptions of grace and beauty. In it he holds up the mirror of his inner life to all who pass; and with an observant eye they may see all the features of his intellectual being in it. In that choice rood he records his progress in mental cultivation and professional experience. In it he marks by some intelligent sign, his scientific and successful ceremonies in the cornfield. In it you may see the germs of his reading, and you can almost tell the number and nature of his books. In it he will reproduce the seed-thought he has culled from the printed pages of his library. In it he will post an answer to the question whether he has any reading at all. Many a nominal farmer's house has been passed by the book agent without a call, because he saw a blunt, gruff negative to the question in the garden or yard.—*Elihu Burritt.*

RASPBERRIES.

THIS wholesome, refreshing, cooling and healthful fruit is not receiving the attention which its good qualities and varied uses entitle it to; coming in during the hot season, immediately after the strawberry, it is used for sauce, pies, jellies, jams, preserves, tarts, wine and vinegar.

Had the public taste set itself to the improvement of our native sorts, (from the seed) instead of foreign varieties, we should now be able to name a large list of hardy American varieties, which would stand unprotected our climate of hard winters, and equal if not superior in qualitiy; but, unfortunately for us, until within the past few years, American horticulturists have contented themselves with the culture of foreign varieties.

The Raspberry flourishes on soil varying from moist to dry; the best is a rich, deep, rather moist sandy loam, but will not refuse to grow in any permeable, deep-worked, rich, dry soil. The roots ramble in search of food near the surface, and are consequently quickly affected by drying sunshine on a naked surface. It is for the mulching and not the shade which place them on such good terms with surrounding trees and shrubs. Give them three inches of leaf or straw mulching in the open ground, and they will demonstrate their preference for the latter position by an increased quality and quantity of their refreshing berries. No fruit pays better for liberal manuring, high culture and mulching. The Raspberry bears on new growth on last year's canes. As soon as the crop is gathered, all the old canes and the feeble young ones should be cut away at the ground and removed to give the new canes strength and firmness for the next year's crop.

Most of the choice kinds are foreign, and in this latitude need protection in winter. Of late, some new native kinds have been introduced which little or no protection. Doolittle's improved Black Cap, the purple Cane, the Ohio Everbearing, and the American Black Cap are perfectly hardy. Experience has proved the two first more desirable. Both these varieties should be planted in rows six feet apart each way.

EARLY GARDEN CROPS.

AMONG the garden crops after those already mentioned, which first require attention, as soon as the ground is at all in a condition to receive the seed, may be enumerated the following:

The first crop of Radishes, to be sown as early as possible, are the Early Scarlet and Long Salmon; these should be followed by the Red and White Turnip Radish; and these for hot weather, by the Yellow and White Summer.

Salsify, or Oyster Plant, is an excellent vegetable for spring and winter use, but not every one succeeds well with it. We have failed ourselves in getting more than half a crop, while at other times we have had

abundant yields. We do not like the roots to be very thick—medium size being much the best. The seed should be sown in drills or rows, from eight to ten inches apart, and when sufficiently sprouted thinned out to three inches in the row. The ground for Salsify should be dug deep and well pulverized, and the soil a rich loam. The plant penetrates sometimes from fifteen to twenty inches. They are, we think, best left in the ground through the winter, and taken out when desired like carrots. They are boiled and a better sauce made for them; or they are excellent sliced and fried like oysters; or they can be grated, formed in the shape of oysters, mixed with the yolks of eggs and fried, in which way they are the most desirable.

The Early Horn Carrot, so excellent in soups or with which to garnish corn-beef, should be put in at once. It requires a well prepared bed, but not much stable manure. Indeed ground manured the previous year may be considered the best especially if it has been limed, as it delights in this application, as does the entire garden every four or five years.

Parsnips can be put in about the same time as the Carrot. The Sugar Parsnip is the best for family use. Sow in drills the same as Salsify. It requires a deep soil, well worked, but no manure, if the soil is in a fair condition, and particularly no stable or very active manure of any kind.

Okra should not be planted before the middle of this month. Plant in rows about five or six inches apart, when up thin to a foot. The ground should be made rich. The rows should be two feet apart. This vegetable should be in every garden. It is used, when the pods are quite young, for soups, affording to them an aromatic flavor and a gelatinous consistency, very agreeable and nutritious. It is also stewed and prepared with butter sauce, and is highly esteemed by many. We have cultivated it for many years, and regard it as one of the most desirable crops to be found in a garden.

Cauliflowers at this time require attention. Unless they get plenty of fresh air when the sun is shining, say from 10 to 2 o'clock, they will not head. As soon as the temperature will admit of it, this exposure should be still greater. If the plants are confined too closely and forced to grow rapidly, there will be plenty of stalk but nothing else.

DOMESTIC ECONOMY.

CHURNING MILK OR CREAM.

Economy of the Two Processes—Opinions of Practical Dairymen.

JOHN Stanton Gould, of Hudson, N. Y., in an address before the Jefferson Co. Agricultural Society, where there is a very strong dairy interest, discussed the above questions, and presented the following views:—

There are two methods of preparing milk for the churn. By one method it is poured into shallow pans, and set aside until the cream rises, when it is skimmed and then churned. By the other it is strained directly into the churn, where it remains until an acid reaction is established, when the entire milk is churned.

James Toller, of Oswegatchie, strains his milk into churns, and when sour, but before it is loppered, churns the entire mass. On the 10th of September he strained 208 quarts of milk into pans, and when the cream had risen it was skimmed off and churned. The amount of butter obtained was 17½ lbs. On the ensuing day he strained 208 quarts of milk into churns, which, as soon as it became sour, he churned, and obtained 19½ lbs. of butter. This is a fair sample of a great number of experiments on record, which are intended to test this question. Mr. Toller's experiment shows that 10 per cent. more butter was obtained by churning the entire milk than when the cream only was churned. Experiments vary with respect to the per centage more or less, but every carefully performed experiment that I have seen myself, or that has been recorded, demonstrated that from 8 to 10 per cent. more butter is obtained by churning the entire milk; and it is equally certain that, as a whole. its quality is better, its flavor more delicate, and it will keep longer without change, The labor of churning so large a mass is indeed greater, but when this operation is performed by water power, or by animals, this is of no consequence; on the other hand, it supersedes the labor of skimming the milk and washing the pans, which makes no inconsiderable item in the labors of the dairymaid. I think there can be no

doubt that this is the best mode of making butter, both with respect to economy of labor and to the quantity and quality of the butter; but if it is determined to churn cream instead of milk, several precautions are absolutely necessary, in order to have it good.

1st. The milk in the pans should be very shallow. The cream rises with rapidity proportionate to the shallowness of the pans. Experiments show that when milk is 12 inches deep, less than half the cream will rise to the surface; you will always find the cream thicker over the flaring edges than over the centre of the pan. Since the flavor of the butter depends in some degree upon the rapidity with which cream rises, the milk in the pan should never be over three inches deep, and it is better when it does not exceed two inches.

2d. Cream should be secluded from all foreign odors. Cream has a remarkable affinity for all kinds of odors; it absorbs them with the greatest avidity, and when the slight protion of them are incorporated with it, the flavor of the butter is sensibly impaired. A smoked ham, a codfish, a piece of cheese or an onion kept in a milk-room over night, will degrade the flavor of the butter. The dairy therefore should be so located that no draft of air from drains, cesspools, hog-pens or barn-yards can at any time pass through it; it should be well ventilated; no particle of decaying substances, either animal or vegetable, should be admitted into it; the most scrupulous neatness should be observed in the walls, the shelves and the utensils; if the milk is spilled it should not be allowed to dry, but should be washed up immediately. The casein of the milk is a nitrogenized body, and is therefore in a state of very unstable union. When it is brought into contact with bodies in the act of change, its affinities are broken up, and it is resolved into new compounds. To prevent this the churns, pans and strainers should be thoroughly washed, scalded and dried, and every possible precaution taken against bringing the milk into contact with decaying substances. The rays of the sun should enter the milk-room at least an hour every day. Cellars, where the direct rays of the sun cannot enter, are often used as milk rooms, but there is always a cellary odor in them which impairs the flavor of the butter. Much of the butter offered in the market is deprived of its sweetness, and diminished in price, from a neglect of some or all of the particulars enumerated.

3d. The vessel in which cream is kept should be tightly covered. This precaution will not only prevent the absorption of noxious odors, but exclusion of light and air appears to favor an occult ripening of the cream which improves the flavor of the butter. Those who have neglected this rule will find that a strict adherence to it will not only improve their butter, but its keeping properties also.

4th. The proper time to skim milk is when it begins to thicken in the centre of the pan, and before it becomes loppered. Every moment it remains after this, its quality is impaired. This is denied by many dairymen, but I think a majority of the best butter-makers will subscribe to the rule. I am myself fully satisfied of its importance. Those dairies where this rule is observed, will in the long run, stand much higher in the market than those that neglect it.

5th. The temperature of the milk at the time of churning is of great importance. Good butter-makers usually have their milk when churning at a temperature ranging from 54 to 64 deg. F. It is impossible to make butter below 40 deg. If it exceeds 70 deg. it is so oily as to be disgusting. Pure butter contains 68 per cent. of a solid fat known as *margarine*, and 30 per cent. of a fluid fat of oil called *olein*. At 60 deg. F. the margarine of milk undergoes very little change; but at 70 deg. it absorbes oxygen from the atmosphere and is converted into *olein*, which gives the butter an oily consistency and a rank flavor. When the sugar of milk absorbs oxygen in the churning process, and forms lactic acid, the transformation is always attended with an elevation of temperature—the thermometer always stands 5 or 6 degrees higher at the close of the churning than it did at the begining. Since, therefore, butter is much better when the temperature at the close of churning is 60 deg. F. than it is at any other, it follows that the temperature at the beginning of the process should be as near 54 or 55 deg. as possible.

6th. The milk of different cows varies very much in the time required for creaming. The milk of some cows will cream in 12 hours, while others require 36 hours; the milk of all the cows should therefore be mingled together before it is poured into the pans, in order to secure uniformity in this respect. When cream from a previous skimming is poured into a vessel containing a previous one, the two skimmings should be well stirred together.

MEAT FOR CHILDREN.

A PHYSICIAN gives us some sensible philosophical suggestions on this subject. Whether our readers agree with him or not, it will do no harm if they think of the matter a little:

"Parents who give their children, under ten or twelve years of age, a meat diet, commit a vital error. The great mortality among children of tender age is, in my opinion, mainly attributable to ignorance on this point. A healthy infant or child glows with animal heat. His little vital machinery, fresh from the ingenious hands of nature, is full of life, electricity, and animation. At birth his palpitating little heart contracts from 130 to 140 times per minute. At the age of three his pulse is above ninety, while that of an adult averages seventy-five. Is it not, then, manifestly wrong to give him a stimulating diet? In rigid winters, the indigent mother sometimes freezes to death; not so the babe in her arms. Who cannot call to remembrance some instance in illustration of this remark? They are full of electricity; to augment in them that active element is simply to inflame the blood and render them susceptible to positive diseases. What I mean as positive diseases are fevers, bowel complaints, croup, water on the brain, &c. Hence their diet should be plain and nutritious—not stimulant. Vegetable food is the best adapted to the nourishment of their little bodies, and keeps their blood pure and healthful, while flesh generates large quantities of carbonic acid gas, which contains 72 parts of oxygen in 100."

COMMERCIAL REVIEW.

PROCEEDS OF CHEESE AND BUTTER FACTORY.

"Alanson Slaughter," our Orange Co. occasional correspondent, writes, that "the dairy products of that county comprise five-sixths of the farm products, and hence the problem to be solved is, how shall dairy husbandry be conducted so as to derive the greatest net income? With farmers located on the line of the Erie R. R., where milk can be sold or made into butter and cheese, the factory system exerts a wholesome influence, as they can send the milk, or as much cream as the market demands, or convert it into butter and cheese as may be most profitable. Those who are far from the R. R., adopt the system of converting milk into butter and cheese exclusively, and that has been my practice, and I think I was the first to make that experiment exclusive of the sale of milk and cream.

I herewith enclose you a condensed statement of the business of our factory this year, but have not time to give an elaborate statement of the general management of our system, it being one which requires so much variation to secure good and uniform articles, that no theory can be written which would prove an infallible guide to a practitioner:—

Amount of milk received 1865: 627,174 qts. wine measure.

27,308 qts. of same sold for.....	$1,926.22
2,261 " " cream "	443.33
1,561 " " skim milk "	24.02
31,360 lbs. butter sold for.....	13,344.21
81,778 " skim cheese "	11,659.08
5,908 " whole milk cheese.....	1,065.44
Hogs, whey and sundries.....	653.73
	$29,116.03
Less expense:	
Hogs and other materials.. $1,758.93	
Labor..... 1,476.40	3,235.33
Net proceeds.....	$25,888.70

PRICES CURRENT.

	$ c.		$ c.
ASHES—Pot.....per 100lbs	5 90	a	5 95
Pearl..... "	7 70	a	7 80
FLOUR—Super. Extra per bbl. 196 lbs.	9 00	a	9 50
Extra.....	8 50	a	9 00
Fancy.....	8 00	a	8 25
Western Wheat.....	6 55	a	6 65
Canada No. 1.....	6 50	a	6 85
United States.....	None		
Superfine No. 2.....	6 20	a	6 30
Fine.....	5 75	a	6 00
Middlings.....	5 00	a	5 25
Pollards.....	4 50	a	4 75
OATMEAL.....per 200 lbs.	4 50	a	4 80
WHEAT—per 60 lbs—			
Wheat (U. C. and U. S. White)...	None.		
U. C. Spring, No. 1.....	1 50	a	1 52
Do. No. 2.....	None.		
Red Winter.....	None.		
Milwaukie Club, No. 1.....	1 49	a	1 50
Do. No. 2.....	0 00	a	0 00
Extra Milwaukie.....	0 00	a	0 00
Chicago Spring, No. 1.....	1 49	a	1 50
Do. No. 2.....	None.		
BARLEY.....per 48 lbs.	0 60	a	0 67
OATS.....per 32 lbs.	0 34	a	0 35
PEAS—White.....per 60 lbs.	0 78	a	0 80
INDIAN CORN.....per 56 lbs.	0 57	a	0 60
PROVISIONS—per brl—			
Pork, Mess.....	24 50	a	25 00
Prime Mess (new).....	20 00	a	20 50
Prime.....	19 00		
BEEF—Prime Mess.....per bbl.	17 00	a	00 00
Prime.....	00 00	a	00 00
BUTTER—1st quality.....	00 24	a	00 26
2nd quality.....	0 22	a	0 23
Inferior.....	0 19	a	0 21
CHEESE.....	0 15	a	0 16