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THE WEATHER.

12th January, 1867.

The year 1866 was singular throughout as regards the weather. A wet and changeable summer was succeeded by a sunny autumn. As the rainfall was unprecedentedly heavy during the summer and early fall, so when the trees of the forest began to assume the sere and yellow leaf, and the warmer tints that are even more characteristic in our climate, there ensued a long period of comfortable and constant dry weather, for the most part remarkable for the season, and with only occasional showers. As for frost and snow, they were not known till within a week of Christmas, and the ground was in such condition that ploughing was going on in some parts of the country till the middle of December. On the 8th of December we had a flower plot dug out of old grass, and planted with Dutch bulbs, the ground turning up as dry and mellow as in the middle of June, and dandelions were seen in flower a few days before. The evenings of 19th, 20th and 21st of December were severe, the thermometer having descended rapidly to below zero, and the ground was covered with a few inches of snow. On the morning of the

22nd December there was a change to mild dull weather, with southerly wind, and the face of "mother earth" was again shown. The end of December brought a snow storm with an average fall of snow of six or seven inches, with considerable drifting; but about Windsor and the Eastern part of the Province, the fall seems to have been much greater. The snow still lies, and gives tolerable sleighing. The temperature of January thus far has been remarkably uniform, and the weather mild and dry; but we are no doubt on the eve of a change.

LO! 'TIS WHITE!

In chess or drafts we give to a lady the *white* men, on the principle, it is presumed, that the weaker vessel ought to carry the less sail. *White* cats are said to be deaf. *Albino* rabbits are said to be weaker in eye sight than coloured ones. A *white* sheet in a churchyard on a dark night is said to make even a strong man grow pale. Ghosts and witches affect *white*. Some people even stand aghast at a *white* surplice. Mary the maid of the Inn, it was said, would faint if she saw a *white* cow. There is no end to the evidence that *white* is ever chosen as the

drapery suited to the personification of anything that is weak, without substance, wanting in constitutional vigour.

But other people, besides Mary the maid of the Inn, feel a tendency to faint, or something worse, when they see a *white* cow, and as for a *white* bull he is not to be tolerated on any terms. The "other people" whom we have likened to Mary are a large number of the farmers of Nova Scotia. We therefore propose to ask them seriously to consider the basis upon which their prejudice against a *white* animal is founded.

We have been told by coloured men that "those *white* people are not good for anything;" "they are not fit to work," and much of the same sort. But our *white*-bull-fearing farmers don't give in to that; they say, an exception is to be made in the case of man. We know also that a *white* bull dog is apt to be none the worse for his colour; a *white* swan, we have been told, is not a *rara avis*. A *white* turkey looks quite as well on a new year's dinner table as a black one. Let us know then the reason, if there be one, why a *white* bull is more objectionable than a *white* sheep, a *white* pig, or a *white* goose. Agriculture has been long enough a rule of thumb art in Nova Sco-

tia; let our farmers arouse themselves and find tangible reasons for their prejudices, or else throw them aside.

Of several breeds of cattle, *colour* is a distinctive mark,—as much so as in the races of men. We expect a Devon bull or cow to be uniformly red, a Galloway or Angus one to be wholly black; if they are not of these respective colours, we are entitled to assume that the breed is not pure.

What of Durham or "short horn" cattle, as they are more correctly called?—No cattle exhibit such a beautiful admixture of colours, red and white, as these.—One of the finest Durham bulls brought down from Canada, and sold at the recent sale at Richmond, was pure white. He was objected to on this score; his fine proportions and beautiful silky coat were ignored because he was white, some even enquired, Can he be pure Durham, and quite white?

We have taken considerable pains to ascertain whether there is really any ground for this prejudice against white short horns; and the result of our enquiries has tended to show, that white colour is more prevalent in the short horn breed than in any other breed of cattle. A very large number of pure short horns have a large proportion of white. The first prize ox at the Smithfield show last month (December) was a *white* ox, and the greater number of the prize short horns at the various agricultural exhibitions in England this season have been *white* animals. In last number of the *Canada Farmer* a first prize *white* heifer is figured. And were we to go back over the prize lists of English and American exhibitions for the last ten or twenty years, the same fact would become more and more obvious,—that white is the prevailing colour of high bred short horns; it is in fact a mark of high breeding.

It is perhaps not generally known that the largest *wild* cattle that have ever been known are the *white* cattle of the European forests, and our own opinion is that the white colour of itself indicates a high development, that the difference between the *white* Durham bull of soft skin and smooth fur and the *black* Galloway enveloped in a curly "Astracan" robe, is very much the same as the difference between a white Anglo-Saxon man and a coloured African one. Each has his merits; for prowess and symmetry, power to eat and fatten, we prefer John Bull to Sambo or Micmac or any other man or gorilla;—the white Durham (so called) we likewise prefer to the black Galloway, the red Devon, or any other ox. It is well known that the Durhams are the largest and most perfectly developed cattle in existence in the world at the present time; it is likewise equally well known that a larger proportion of Durham cattle are *white in colour*

than any other breed; these two facts are highly significant, as indicating a coincidence between high breeding and white colour, which would lead any reasonable man to prefer a white Durham bull to a Durham bull of any other colour; but men are misled by fancy as women are misled by fashion.

Whilst offering these statements, we do not wish our opinion to be taken in the matter for more than it is worth. Let us have a full expression of the opinions of our farmers on the subject; let all be said on both sides that can be said, and then those who are seeking for the truth will have some chance of finding it.

MILK, BUTTER AND CHEESE;

THEIR PHYSIOLOGICAL AND CHEMICAL HISTORIES; THE INFLUENCES OF FEEDING PLANTS UPON THEM; PRACTICAL DIRECTIONS FOR THE MANAGEMENT OF THE DAIRY.

It is a great mistake to suppose that the business of farming begins with the sowing of seed in the spring, and ends with the reaping of corn in autumn. If that were all the business of farming, if it consisted merely in the routine of ploughing, sowing, harrowing and reaping, there would be very limited scope indeed for the exercise either of knowledge or judgment; farm operations would come round in a regular mechanical manner as the teeth of a cog-wheel, and the apparent influence of mind over matter would all but disappear.

Those who take an enlightened view of farming arrive at a very different conclusion. They see in it an art that requires much practical experience and personal observation, while it is also dependent upon a wide field of scientific knowledge. The operations of draining and deepening the soil require a knowledge both of the principles of natural philosophy, and of geological science; and in like manner the application of manures calls for an intimate acquaintance with the results, and some of the details, of chemistry. And even after all the departments of knowledge are exhausted which become available in the culture of the plant, after we have exercised our geological and chemical and mechanical knowledge in improving the soil, our botanical knowledge in selecting suitable crops, and our practical experience and acquaintance with meteorology, and it may be entomology and mycology, in their after culture and protection from those numerous blights which plant-flesh is heir to; even after the exhaustion of all our energies in the application of mechanics to the reaping of the crop, which one might fancy was the *finale* of field operations,—even then the work of industrial war seems but to begin; new lines of operations open up,

requiring the application of new branches of knowledge, and the working out of new systems of tactics. For the object of farming is not merely the annual production of a certain amount of grain and fodder; that grain and that fodder involve the keeping of live stock, the production of flesh, and other animal products.—Here, then, a knowledge of the principles of animal physiology comes into play. Experience may teach us in a general manner that the way to get plenty of flesh and plenty of milk is to afford plenty of food; but then animal food is of money value, and it becomes a question of the greatest practical importance, one upon which the farmer's success in business often depends more than on any other, to ascertain in detail how the largest amount of produce can be obtained from the smallest expenditure of feeding materials. This is a question whose detailed results appear to differ in the hands of almost every farmer, so that there is often the greatest possible difficulty in arriving at accurate general conclusions; but it may be safely said that a knowledge of those general principles which have been ascertained respecting the physiological phenomena of animal life form the surest foundation for all practical experience and experimental investigations on the subject. The question of the economical production of milk, and the manufacture of that article into butter and cheese, will afford scope for illustrating some interesting points in animal physiology, as well as of indicating the value of such knowledge, and of physiological chemistry, to the practical farmer. The subject will be most advantageously pursued, however, if regarded as much as possible from a practical and economical (or commercial) point of view.

The subject of milk, cream, butter and cheese, is one so vast and diversified in its chemical and physiological relations that in the brief space here allotted, we can only hope to "skim the surface."

Milk is a secretion of the mammary glands possessed by all animals belonging to the class *Mammalia*, its purpose being the nourishment of the infant animal while its masticatory and digestive organs are not prepared for the proper food of the species. In many *mammalia* it forms the sole food for a long period, and must therefore contain all the elements necessary for nutrition. On this account, Prout has proposed to take milk as a standard of food, and to classify all food according to the constituents of that secretion:—

1. Aqueous foods, represented by the water of milk.
2. Albuminous foods, represented by the caseine of milk.
3. Oleaginous foods, represented by the butter of milk.

4. Saccharine foods, represented by the sugar of milk.

The abundant supply of this substance afforded by several domestic animals, has led to its appropriation as an article of human food from the remotest times. In this country the milk of the cow is that in general use, but that of goats is likewise employed to some extent.

When a drop of milk is examined under the microscope, it is seen to consist of a number of spherical bodies rolling freely in a clear fluid; they have dark outlines, but are transparent in the centre. These globules consist of a delicate albuminous envelope, enclosing a drop of oil (butter.) "The membrane keeps them separate, so long as it is intact; but if dissolved by means of acetic acid, or ruptured by heat or mechanical violence (as in the churn) the butter is readily separated and collected. Cream is composed of the larger of these globules, which owing to their light specific gravity float on the surface of milk when allowed to repose. The richness of milk is determined by the quantity of these globules."*

The richness of milk and the quantity secreted depend in a great measure, in fact entirely, upon a due supply of food being provided; not indeed that any special kinds of food are capable of themselves of leading directly to the production of an abundance of milk greatly beyond other kinds of the same nutritive value, but a sufficient supply of fatty matter must be provided to supply in the first instance the wants of the living animal, and secondly, to afford the milk-secretion. It has been suggested whether animals derived any portion of their fat from the conversion of sugar and starch into that substance, but Dumas, Boussingault, and Payen have endeavoured to show (Comptes Rendus, 13th Feb. 1843) that fatty matter is formed in plants only, that it passes already prepared into animals, and that there it may be either consumed at once for the development of the heat which the animal requires or take its place more or less modified in the tissues, to serve as a reserve for respiration.

The production of fat and milk have an intimate relation in animals. There exists the most perfect analogy between the production of milk and the fattening of animals. (Payen, Edinburgh Journal of Agriculture, Oct. 1844.) The secretion of milk seems to alternate with that of fat. "When a milch cow grows fat, her milk diminishes, the best milkers remain long thin after calving. In some of the English breeds, where the fatty cellular tissue is much developed, as for instance the Durham breed, the quantity of milk may be very great after calving, but they quickly grow

fat, and the secretion of milk does not last as in the Dutch and Flemish cows. English swine, which are much more inclined to fatten than the swine of the French breed, are rarely such good nurses, that is to say, they give less milk." And daily experience affords illustrations of this balance.

If it be true, says Boussingault, as it evidently is, "that the quantity of milk produced depends especially upon the absolute quantity of nutritive fluid consumed, it is not so with the quality of the fluid. It is undeniable that the milk of spring and summer, formed upon green and succulent food, is much more palatable than that of the winter season; the butter is also much finer and better flavored. The green herbs of our pastures undoubtedly contain volatile principles which are dissipated and lost in the processes of drying and fermentation which they undergo in their conversion into hay. If chemistry be powerless in seizing such principles, it still informs us of the possibility of introducing a variety of articles into the food of cows which have the property of communicating those qualities which we prize in milk. In all grazing countries certain vegetables are pointed out as giving, in the vulgar opinion, a particular aroma to the flavour of milk." (Rural Economy, pp. 612-3.) It is certain, however, that although the flavour is greatly influenced (and this is the commercially important fact) by feeding plants, the chemical composition of the milk is not materially changed.

The constituents of cow's milk under ordinary feeding are as follows:—

Casein (cheesy matter)	4.43
Butter,	3.13
Sugar of Milk,	4.77
Salts (various)	0.65
Water,	87.02
	100.00

When fed on BEET a change occurs in the milk, in an increase of sugar, viz:—

Casein,	3.75
Butter,	2.75
Sugar of Milk,	5.95
Salts,	0.68
Water,	86.87
	100.00

When fed on Carrots, the milk was found to give—

Casein,	4.20
Butter,	3.08
Sugar of Milk,	5.30
Salts,	0.75
Water,	86.67
	100.00

Carrots appear to have the effect of greatly reducing the quantity of milk from that given under mangold wurzel; the milk of carrots is also found to be

poor, so much so as to serve admirably as a substitute for woman's milk, which on the average is greatly inferior in richness to that of the cow.

The largest quantity of milk is obtained from cows during the first three months after calving, the produce then being 18, 20, or 24 pints per day, whilst the mean quantity during the whole time of milking will very slightly exceed 12 pints. (Boussingault.) Long nursing also induces a gradual change in the constituents of milk, both in the case of the woman and the cow, the butter decreasing and the salts increasing. In milking, it is of great importance to milk "dry at each meal," for two reasons; first, the milk last drawn, the "strippings" and "afterings," contains three times as much cream as the first; and, secondly, when the larger vessels are regularly emptied milk is being constantly secreted by the glandular tissues, but if an accumulation takes place, a re-absorption occurs, and the secretory action is impeded.

There are still a few points in the chemical history of milk to which we wish to refer.

Milk sugar does not undergo fermentation, so that the stomach of the infant is not liable to be extended by the production of carbonic acid gas.

In the colostrum, or milk first produced after the birth of the young animal, albumen is present, and coagulates by heat.

Milk is analyzed by drying it by evaporation, then dissolving out the butter by ether and alcohol, and afterwards the sugar and salts by water,—thus the casein remains undiminished.

When exposed to the air, the casein of milk begins to decompose, and then acts as a ferment upon the sugar, converting it into lactic acid. This acid is no sooner formed than it in turn acts upon the undecomposed casein.

The chief mineral substances in milk are potash and phosphate of lime.

The subject of manufacture of butter and cheese from milk, must be deferred till next month.

EFFECTS OF DRAINAGE.

For every inch of water drained off which would otherwise pass into the air as vapour, we are told as much heat is saved per acre as would raise 11,000 cubic feet of air one degree in temperature. The dew point is also raised, hence less mist and dampness and greater comfort. A farmer was asked the effect of some new draining. "All I know is," he replied, "that before it was drained I never could go out at night without a great coat, and now I never put one on. It just makes all the difference of a coat to me."—Report of the Metropolitan Sanitary Commissioners.

* Bennett's Lectures on Clinical Medicine, p. 204.

THE AMERICAN SYSTEM OF AGRICULTURAL EXHIBITIONS.

THE SARATOGA FAIR OF 1866.

Farmers in the Northern States take more interest in Agricultural Fairs than do the farmers of Nova Scotia. They have been long accustomed to look forward to them with interest, and when a farmer does not himself attend the Fair, he is yet able, from the reports, to seize the real points of interest; did he not do so he would feel that he was behind hand in his business, that he was "really a day after the fair."

In most of the Agricultural States there is a regular system of Annual Exhibitions, which are held alternately at different points in the State. We have just received the Journal of the *New York State Agricultural Society*, for November, containing a report of the State Fair held at Saratoga Springs on 11th, 12th, 13th and 14th September. These State Fairs began at Rochester in 1851, on which occasion there was a very large number of cattle, sheep and swine from numerous exhibitors. Of late years the quality of the animals has very much improved, but their numbers are fewer, and the competitions are confined to a few leading exhibitors. In Devons especially the show at Rochester fifteen years ago was far better than at many of the later fairs. In Herefords there has been a great falling off. Ayrshires then, as now, were confined to few exhibitors. Of Jerseys, not a single specimen was shown in 1851; but later Fairs have called out a very creditable show. As regards sheep, in 1851 the French Merinos were attracting considerable attention, and finer specimens of these, as well as of Saxons were shown. Now a Saxon sheep is seldom seen, and the French Merinos have disappeared. The "American Merino," so called, having thrown its old competitors for the time being, into the back ground. The Siberian Merinos are yearly attracting more attention. There has been a marked improvement on South Down. Shropshire Down were shown for the first time at the State Fair in Elmira in 1860, and since then have attracted the attention of some leading breeders both in the States and Canada. Long Wools (*Leicester and Cotswold*) were well represented in 1851, and have received increased attention within the last few years. In everything that relates to implements for harvesting crops there has been a marked improvement.

The Saratoga Fair of 1866, like the Canadian one, opened on a gloomy rainy day, but that did not damp the farmers' spirits. "It was something to see the splendid specimens of cattle and sheep, but it was more to meet the owners and breeders." This meeting of old friends is one of the pleasantest and most profit-

able features of the annual fairs. Then there were the evening discussions; the subject selected for the first evening was a very suitable one, but it might surely have been expressed in a neater title, for a farmer does not necessarily drive to a fair in a lumber-waggon drawn by four team of oxen. He is the subject:—"Dairy farming; City milk farms; Butter and Cheese making in families as compared with factories; the advantages of both systems—Butter and Cheese making combined in one factory; the profits of dairy farming compared with other systems in all their bearings."

It would be incongruous for a small journal like ours to attempt to give a full report of the Saratoga Fair, and we shall therefore merely skim off some of the thickest cream from the report. The dairy discussion brought out the candid statement that it is not necessary to have a strictly clean cheese in order to bring a good price. "The more there is in it, the more there is of it." But, says another, it makes "clean money." The whole tenor of the discussion goes to dispel the illusion of a "churn as white as ivory and butter as yellow as the purest gold." Mr. Whitman urges strongly the importance of cleanliness, or as it is expressed, "neatness," which we suppose is an American euphemism. The barn should have platforms for the cows to stand and lie upon, another for the milkers to walk upon, nicely littered with sawdust; there should be pails in readiness with water to wash the udder, and towels for wiping the udder of the cow and the hands of the milkers. One man thought after what had been said he would give up eating cheese; he always washed the teats of his cows, but this carrying a towel around was new to him. The best weather for making cheese and butter is when the temperature is about 60°. If the cream is warmer, cool it by placing ice around, but never *in* the cream; it is injurious.

Of **POULTRY**, some of the specimens shown were very poor, others remarkably fine, especially the Dorkings. One hen was of the venerable age of 17 years, and a majestic gobbler could bear up a 35 lb. weight on the scales. Some of the Brahmas, five months old, could "eat corn from the top of a barrel."

In **PIGS**, the show consisted chiefly of Cheshires, sometimes shown as Yorkshires; they are not a pure breed: "Pure white in colour, with fine stand-up ears, thin hair, great length, square backs, full hams and shoulders, round full bodies, handsome heads, full cheeks, and *very fat*." The Chester whites (a totally different breed) showed very poorly.

In **CATTLE**, the best stock came from the western part of the State. Fat cattle and grade classes were not very well filled. "It is a well known fact that

grade Short Horns will fatten on good feed at least a year earlier than ordinary cattle." A pair of six year old fat oxen of this kind weighed 6000 lb. The reporter asserts that Herefords are declining, but their beef is of excellent quality. There was a good show of Devons. Many dairy farmers are purchasing thoroughbred Devon bulls to cross with their cows. There were splendid Ayrshires, such as "have never been surpassed." Of Jerseys (Alderneys) there was a good show of this "gentleman's breed," which is rapidly increasing in the Eastern parts of the State. It is just the breed for domestic use, but for general dairy purposes they are not thought so profitable as the larger breeds. The trouble with these cattle is that the calves are mostly bulls. Mr. Moore two years ago removed one of the testes of his bull, and last season all his calves were heifers. The Short Horns were the grand feature of the show. "The first prize was awarded to James O. Sheldon, for Mazurka 13th, a beautiful white cow bred by R. A. Alexander of Kentucky; she was in high condition, and a very showy animal, and popular opinion outside the ring sustained the award."

Some remarks on the sheep exhibited we had marked for extract, but must defer them till a future opportunity. Meantime we have to thank Mr. P. B. Johnson for his kindness in continuing to send us his valuable and interesting "Journal of the *New York State Society*," which we would more frequently notice if our limited space permitted.

FISHES AND FISHERIES OF NOVA SCOTIA.

Mr. Thomas F. Knight has prepared a "descriptive catalogue of the fishes of Nova Scotia," as the first of a series of papers "on the fisheries of Nova Scotia in all their aspects, historical, economical, commercial and political." Fifty-one fishes proper are enumerated, with specific descriptions of most of them, and indications of their distribution and habits. Ten sea mammals are likewise described, two crustacea and a number of the more common edible mollusca. From Mr. Knight's work we learn that the skate is found everywhere and of large size on the coasts of Nova Scotia, but is not esteemed as in England; the Norway haddock appears to be rare; the perch abounds in the fresh waters of Nova Scotia as elsewhere in British America; in 1865 exported mackerel realized probably \$1,000,000. We cannot agree with our author that the angler (*Lophius Americanus*) has "a very disgusting appearance." "There's beauty all around our path, if but our watchful eyes would trace it in familiar things, and in their lowliest guise." The common haddock abounds

in the harbours of Nova Scotia; "it is to a limited extent prepared in the same manner as the Finnan haddocks of Scotland." Of the halibut it is said "the flesh is somewhat coarse and dry," whilst the "mud cat" is in Maine and Massachusetts "highly esteemed." Every one to his taste, as the old woman said when she kissed her cow. In the Lower Provinces "the brook trout scarcely exceeds 3 lb. in weight, and no well authenticated case is on record of one having reached the weight of 6 lb." The "delicate and savory" smelt abounds in Nova Scotia; the shad "attains the highest perfection" and feeds on the shrimp; why are shrimps not brought to the Halifax market?—From two to four gallons of oil are obtained from the blubber of a full grown common seal; the Greenland seal produces from ten to twelve gallons; the grampus yields but little oil; the white porpoise gives good leather; the common whale a coating of oil-yielding fat fourteen or sixteen inches in thickness; the blubber of the hump-back whale furnishes 300 to 2300 galls. of oil. The crab is rare, and the abundance of the lobster renders it a food of marvellous cheapness. We have oysters, both the "native" and Virginian, scallops of three kinds, two mussels, the Iceland venus, clams, periwinkles and whelks. Lastly the French Societe d'Acclimatisation has sent to Brother Jonathan for a few hundred bushels of venus mercenaria.

THE BRITISH AMERICAN BEAVER.

(*Castor Canadensis*.)

In Europe the Beaver has become almost, if not quite, extinct. In the British Isles he has been so long extinct that there is hardly a trace of him to be found either in Antiquarian or Zoological Museums. We recollect that while Dr. Wilson of Edinburgh was writing his most elaborate Treatise on Beaver History, he had the greatest difficulty in finding a skull or other memento, and had to ransack not only old dusty Museums, but the sunny memories of the oldest inhabitants likewise, in order to ascertain with certainty whether beavers ever had existed.

In British America we are more fortunate. It has been long well known that beavers exist in some numbers in the more remote parts of Upper Canada and the Company's Territories. In the County of Halifax there is an extensive meadow on the Beaver Bank farm that is understood to have been entirely "cleared" by beavers. And at the December meeting of the Nova Scotian Institute we had by far the most interesting paper that has been read before that body for a long time, being an account by Colonel HARDY of the Royal Artillery, of the habits of

the beavers around lake Rosignol, between Liverpool and Annapolis, where it appears there are many beaver-houses, but the inhabitants are so vigilant that it is difficult to find them either "at home" or abroad.

It was stated that the Beaver is to be found along the Port Medway River, near its head waters, in the rivers in Shelburne county, and in the waters across the country to Annapolis. On one of the rivers in that last direction, a dam of large size was found, which was described as a model of solidity and strength, built straight across the stream, to which it communicated the appearance of a small water-fall; it was built concave to the current, but in other instances they were found convex; on the top of the dam three men could walk with ease. The opportunities were frequent of examining Beaver's houses, which were all similarly constructed. There was but one chamber to each, connected with the water by numerous tunnels; the beds of the animals were raised above the stream which formed the floor of the domicile, and laid with meadow-grass, and with finely-shredded shavings of branches. Several branches of trees were exhibited as forming part of the material of the houses, one nearly three inches in diameter. These had been cut off the trees, with mechanical precision, and as cleanly by the keen teeth of the Beaver as though the work were done with a chisel. Some notes quoted showed that instances were not rare where the Beaver dams had been the instruments of flooding several hundred acres, and a wonderful instance of reasonable calculation, or design, on the part of the animal to promote either pleasure or comfort, if so considered, but probably the result may be attributed to accident.

A very pretty and ingenious model of a Beaver's house, interior and exterior, as constructed by the Nova Scotian animal, and with the appropriate adjuncts of scenery and locality, was exhibited by Colonel HARDY. It was suggested that to those who had taken their impressions of such edifices from the regular dome like structure attributed to the Beaver in pictures, it might be a disappointment.

THE PROFITS AND LOSSES OF GOOD AND BAD FARMING SHOWN FORTH IN DOLLARS AND CENTS.

Money properly used is the source of many of the comforts of life; hence the great end of farming is to make money. It is not to embellish the land, to build fine houses, barns and fences; to raise fancy stock, or in any other way to make a show in the world. It is to make money, to acquire property, with the ultimate view of taking the comfort of it. The grand question is how can a farm be rendered the most profitable? And the answer is, first and last, by improving the soil so as to make it most permanently productive.

The great defect of American farms, at least this side of the Alleghanies, is their impoverished condition. They have been cropped and recropped, their products sold, and but little returned to the land to keep up its fertility. Any body can

see that the net products of a farm which yields 50 bushels of corn to the acre, are much greater than one that gives 40. For, if 30 bushels will pay the expenses of tillage, there is a profit on the former of twenty bushels, and on the other of only ten. Supposing this to hold good on all the crops of the farm, is not one acre of the first farm worth two of the second? In whatever way we can increase the income of the land above the expenses, we gain so much more profit, and this decides the value of the farm. If land which gives a clear gain per acre of \$7, is worth \$100 to the acre, then that which gives \$14 gain is worth full \$200 per acre.

It costs nearly as much to till land which yields only a profit of \$3.50, as that which yields \$14. Why not, then, apply the extra manure, and the extra brain-work, and get the \$14? The first man barely gets a living; the second grows rich. The best agriculturists here and in England, have found out this true principle, and it is the key to their success. They make it a settled, invariable rule, to enrich the land in proportion as they crop it, and to invest their surplus money in the soil if they can be sure of fair interest for it.

And this brings us to the old question, how to enrich the soil? Few farmers have the means to bring up their lands at once. When the land holder and his land are both poor, the farmer is in a pretty tight place. There is so little to begin with. The great reliance must be on the barn-yard, pig-pen, poultry-house, privy, and green-crops, and the muck-bed.

By some means, let him contrive to raise more grass and fodder crops; this will enable him to keep more stock, and this of course brings the increased manure. By buying a few tons of manure to start with, this will give the increase in the grass, and so the ascent will surely follow. Grain and root crops will then come in for a share of the profits. The importance of draining, of deep-plowing, etc., we need not now dwell upon. No good farmer will neglect them. It must also be understood, at the outset, that the work of renovating an old worn-out farm is the work of years, and must be prosecuted with patience.

[The above remarks from the *American Agriculturist*, apply very well to farming in Nova Scotia, and we commend them to the careful consideration of our readers.—ED.]

LOCAL AGRICULTURAL EXHIBITIONS IN NOVA SCOTIA.

The Secretary of the Board of Agriculture requests that all Agricultural Societies intending to hold Exhibitions this year (1867), will send him definite notice of the precise time and place of such Exhibitions, as early in the season as possible.

INSTRUCTIONS FOR PREPARING SKELETON LEAVES.

Mr. Saffor read a communication from Dr. G. Dickson on the preparation of skeleton leaves. A solution of caustic soda is made by dissolving 3 oz. of carbonate soda (washing soda) in 40 oz. (2 pints) of boiling water, and adding 1½ oz. of quick lime previously slacked; boil for ten minutes, decant the clear solution and bring it to the boil. During ebullition add the leaves; boil briskly for some time, say an hour, occasionally adding hot water to supply the place of that lost by evaporation. Take out a leaf and put into a vessel of water, rub it between the fingers under the water. If the epidermis and parenchyma separate easily, the rest of the leaves may be removed from the solution and treated in the same way, but if not, then the boiling must be continued for some time longer. To bleach the skeletons mix about a drachm of chloride of lime with a pint of water, adding sufficient acetic acid to liberate the chlorine. Steep the leaves in this till they are whitened (about ten minutes), taking care not to let them stay in too long, otherwise they are apt to become brittle. Put them into clean water and float them out on pieces of paper. Lastly, remove them from the paper before they are quite dry, and place them in a book or botanical press. Specimens so prepared by Dr. Dickson were exhibited, and presented to the Museum.—*Proc. Bot. Society, Edin.*

Communications.

SYDNEY AGRICULTURAL SOCIETY.

IMPROVEMENT OF PIGS, SHEEP AND CATTLE—FOREIGN GRASSES—THE CROPS—THE PROVINCIAL EXHIBITION OF 1868.

Sydney, C. B., Dec. 4th, 1866.

The President and Directors of the "Sydney Agricultural Society," in presenting their annual report, have reason to congratulate you on the increased interest taken in agriculture, as evidenced by the very large accession in the number of applicants to become members; altho' from local circumstances, which in future must be provided against, many have not yet signed the prescribed declaration roll, and it will be for your consideration whether a second society, to embrace the southern shore and mining districts, shall not be formed, still the addition is sufficient to place you in the first rank of similar societies in the Province.

The intention of holding an exhibition, expressed last year, has not been carried out, because on seeking the co-operation of other County Societies it was found they preferred to apply all their available funds to the purchase of improved breeds

of stock; and your directors, feeling a local show in the present state of our agriculture, without such co-operation, would disappoint expectations, and could do very little, if any good, resolved to adopt a similar course. In pursuance your President has visited several places, and been in correspondence with breeders of pure stock both in the Provinces and United States, which has resulted in the purchase of a pure Berkshire boar pig and three Cotswold rams from the very superior stock of H. E. Decie, Esq., Wilmot; of three Leicester rams from F. R. Parker, Esq., Shubenacadie, N.S.; and at the recent government sale in Halifax, a Cotswold ewe and ram, a Southdown and Leicester ram from the flocks of breeders in Canada of great repute,—these have been drafted out in the various sections as applied for, and your directors hope to witness a very speedy improvement in this important branch of our industry. The cattle offered brought prices so much above the authorized limits that your President was reluctantly compelled to allow some valuable animals to pass into other hands; but it will be for your consideration whether any of five bulls offered shall be purchased, and you will also have the offer of Suffolk and Yorkshire pigs, with some Southdowns from the United States.

The Central Board and its estimable Secretary have our thanks for the attention paid to some complaints we were compelled in the last report to make; on the recent occasion such ample time was given that the Cape Breton societies have been enabled to make arrangements and secure a fair proportion of sheep and cattle. As these importations have reimbursed the Province, been so eagerly purchased and given such general satisfaction, it is hoped the Central Board may be induced to continue them, and that in future selections improved Gallows may not be overlooked,—and further that grains and grasses may be introduced. Your directors are of opinion that Italian rye grass, blue Kentucky grass, English cow grass, with some of the fescues, (*Festuca loliacea* for instance) might be found of great advantage, as in New Zealand and the Australian Colonies, we learn from private reports, they have evoked a revolution in grazing districts; and it is evident our grasslands are not what they might be for want of greater variety in seeding. So many obstacles present themselves to a local society operating on its own account, that it can scarcely be done unless through the Central Board.

We have also to report thankfully of the state of our crops; heavy rains at periods retarded farming operations, and in exposed or wet situations did some damage, still, the general yield has been above an average. Hay has yielded a larger crop

than in 1865. Grains of all kinds are also in excess. Potatoes are better in quality and more abundant in quantity than for many past seasons, although the rot has been excessive in "Jenny Linds," and prevalent in many varieties of whites, blacks of all kinds are universally good; the Gooderich Seedlings yielded enormously. Turnips and vegetables generally have done well, whilst fruits are abundant.

Your directors cannot close this report without reminding you that in 1868 a Provincial Exhibition will be held.—Local committees will very early next year be organized, and intending exhibitors will do well to commence their arrangements and as early as possible mature their plans. The efforts now making to disseminate more enlightened views on the science of agriculture, the introduction of improved breeds of cattle, sheep and swine, of grains, grasses, &c., with the great natural capabilities of Cape Breton, ought to place you as competitors in a high position.

Nor ought we to fail in reminding you that as our mining resources are becoming year by year more fully developed, a population will gather round them equal to one-half the present County as taken at the last census; these will be dependent on you for supplies, whilst the coal trade with the States at no distant day will be carried, partially at least, in steam vessels, thus affording a rapid transit for various farm products to the large cities on the Atlantic sea-board. Whenever, then, you are in a position to supply articles of first rate quality in mutton, beef, butter, &c., you will unquestionably command a ready market at very remunerative rates.

Gentlemen, appended, is your Treasurer's account.

H. DAVENPORT, *Pres.*
C. H. HARRINGTON, *Sec'y.*

LUNENBURG AGRICULTURAL SOCIETY.

THE CROPS IN LUNENBURG—MARKETS.

Lunenburg, Dec. 14th, 1866.

SIR,—I have to report for the information of the Board of Agriculture that the annual meeting of the Lunenburg Society was held in the Court House, on Tuesday, 4th inst., when the following officers were appointed for the ensuing year:—

John N. Kaulback, High Sheriff, *Pres.*
F. W. George, Esq., *Vice Pres.*
Daniel Owen, Esq., *Sec'y. and Treas.*
Rev. N. L. Owen, N. M. Meyle and Robert Lindsay, Esqrs., *Directors.*

The accounts of Secretary were submitted and approved of by the Board.

Brief addresses were made by several

members present, which added to the interest of the meeting.

During the year a Fan Mill and Separator was imported from New York, but does not appear to have given general satisfaction.

The farmers connected with the society expressed themselves well pleased with the ram lately purchased at the agricultural sale at Halifax. Since the purchase he has been kept by different members of the society for the use of their sheep, and ordered by the society to be sold on first Monday of January next.

It was ordered by the meeting that in March next arrangements be made for the agricultural proceedings of the ensuing year.

It is to be regretted that the farmers resident within the Lunenburg Agricultural District, with but few exceptions, have not taken that active interest in the society that they ought, by furthering the noble intention of the Legislature in passing the act for encouragement of Agriculture.

The grain crops throughout the County have been very light the present year.

The potato blight was very general throughout the County, particularly among the early kinds; and had it not been for the well-timed importations from P. E. Island, the supply for the winter would have been very short.

Our market has been well supplied with beef, notwithstanding the extensive shipment of cattle to Halifax from the port of Lunenburg. The steamer *Empress* took away thirty head of beef cattle in one trip.

The hay crop is short, but the open winter will help out the young cattle.

If the funds will admit of it, an agricultural exhibition or ploughing match may be anticipated during the Fair of 1867.

The benefit of the old society is still very visible in the County in the improved appearance and breed of cattle, and in the agricultural implements now in use, particularly the plough. So that the act passed from year to year for the "encouragement of agriculture" has not been passed in vain, but is doing its well-intentioned work slowly yet surely.

I have the honor to be, &c.,
DANIEL OWEN, *Sec'y.*

GLENELG AGRICULTURAL SOCIETY

ANNUAL FAIR—CROPS.

The Officers and Directors of the "Glenelg Agricultural Society" beg leave to submit their report, as follows:—During the year just past, we have to state that not so much improvement has been accomplished in the way of agriculture as might be desired. Agreeably to resolution of last annual meeting, an exhibition

was held at Mr. Isaac Archibald's on the 16th October, which was not as largely attended as might have been expected.—The show of live stock, though limited, was of good quality. The show of domestic manufacture was excellent. Grain and roots were not largely exhibited, but were of superior quality. The amount paid for premiums is \$51.95.

During the month of October there were purchased for the Society, at Antigonish, five ram lambs and six ewe lambs of superior breed, at a cost of four dollars each and four dollars expenses on the whole; these were sold to members of the society at a public sale, and realized the sum of \$29.50. The bull and rams purchased by the society last year at P. E. Island have been kept in the society, and have, we believe, given universal satisfaction. The cost of keeping these animals has been \$30.

The crops during the past year were generally abundant. Hay has not been more abundant for many years, but in consequence of continued wet and unfavourable weather during harvest, a considerable quantity was secured in a bad state, and more on low meadow land not mown at all, but on the whole there has been more saved in good condition than for many previous years. Oats are well filled, and heavy in straw, and will, no doubt, be an average crop. Wheat, so far as we can learn, is an inferior crop, in many instances not being sufficient to repay the husbandman for his labour in growing it. Buckwheat is considered rather above the average. Potatoes generally were an abundant crop, and so far as we can learn are doing well in the cellars.

At our annual meeting this year it was agreed to sell the bull and rams to members of the society, to be kept in the district for one year. It was also agreed to expend the sum of \$80 in an exhibition next October.

SAMUEL ARCHIBALD, *Pres.*
J. A. KIRK, *Sec'y.*

WEST CORNWALLIS AGRICULTURAL SOCIETY.

STATE OF THE CROPS—IMPROVEMENT OF STOCK.

The West Cornwallis Agricultural Society submits the following annual report:—

The hay in this section of the country was a fair average crop, but owing to the wet weather in the latter part of the season some of the hay on the low meadows was injured. Wheat was very little sown in this district, owing to the fly, which still continues to injure the crops. Rye, oats and barley were a full crop, but some loss was sustained by the wet weather at the time of harvest. Buckwheat and Indian corn was a good crop on lands

that were well prepared. Beans good. Potatoes were rather below an average crop, and considerably diseased. Turnips, carrots and other roots gave a good return for the labour expended. Fruit was rather below an average yield, but the quality good.

This Society are making great exertions to have their cattle and sheep of a superior class, and have expended all their spare funds for the purchase of such animals as were needed in this district to improve the breed; and much regret is manifested in this district that the horses imported last season were not such animals as would suit the wants of this country.

This Society has disposed of one of their Durham bulls on account of a wen on the jaw. They have now in the Society one Ayrshire bull bought in New Brunswick about fourteen months ago, and one Durham bought last April.

This Society highly appreciate the manner the Board have taken for the distribution of the public money, the fairness of which cannot be questioned.

ELIAS CALKINS, *Sec'y.*

FENWICK AGRICULTURAL SOCIETY OF NOEL AND MAITLAND.

We have made arrangements to take into our Society Selmah and Maitland districts; and agreed that the Society should be called the "Fenwick Agricultural Society of Noel and Maitland."

J. J. O'BRIEN, *Sec'y.*

BRIDGEWATER AGRICULTURAL SOCIETY.

Report of the officers and directors of the Bridgewater Agricultural Society, made at the annual meeting of said society, December 8th, 1866, adjourned from December 4th, 1866.

The Society was organized on the 24th February last, and the following persons were chosen as officers and directors in the same:—

Pres., Abraham Hebb, Esq., M. P. P.; *Directors*, Henry Cook, Charles Bieno, Robert West, Thomas T. Keefer, and William Hebb; *Sec'y and Treas.*, Mather B. Desbrisay.

There are 67 members.

At a meeting held on the 17th of March last, Messrs. Simeon Hebb and Josiah Cook were appointed a committee to purchase for the society a two year old bull. In pursuance of such appointment, a bull of the age mentioned was purchased, and the sum of thirty-six dollars paid therefor. It is expected that, as the animal was selected from good stock at Windsor, improvement will soon be visible in the cattle raised in this district.

A bushel of the best flax seed was also purchased for the society, by the Presi-

dent, of which quantities were sold to members at one shilling per quart. The flax raised from this seed has, from its superior quality, given great satisfaction, and we would respectfully recommend its more general use.

In conclusion we beg to remark, that if the farming population and all who feel an interest in the advancement of agriculture, would support this society not only by contributions to its funds, but by personal exertions in its behalf, they would, there is good reason to believe, reap a gratifying reward in a vast improvement of crops and stock, and they would feel the good effects of mutual counsel and support gained through the meetings of the society—and by annual exhibitions of crops, stock, farming implements, and specimens of handiwork, for which provision is made by law, and of which, we trust, due advantage will hereafter be taken.

The accounts show a balance of \$1.90 in hand.

ABRAHAM HEBB, *Pres.*
M. B. DESBRISSAY, *Sec'y.*
Bridgewater, Dec. 12th, 1866.

OBITUARY.

R. A. JONES, ESQ.—We regret to learn, by a letter from Alex. Cameron, Esq., of the death of R. A. Jones, Esq., Secretary of the Baddeck Agricultural Society. Mr. Jones took an active part in the re-organization of the Society a few years ago, and has since then discharged the duties of Secretary in an able and conscientious manner. He was a young man of promise, much respected in the circle in which he moved, and ever ready to lend a helping hand in pushing on any useful enterprise in his neighborhood.

Miscellaneous.

SMALL TALK.

The small talk about town has been all about Mr. Townsend's display of commercial fishes, Mr. Jones's show of scientific ones, Prof. How's exquisite minerals, Mr. Downes's work which shows so well that fine feathers make fine birds, and Dr. Gilpin's furs that speak of comfort in the cold weather.—Dr. C. C. Hamilton, M. P. P., has made some valuable contributions to the agricultural department of the exhibition that came too late to be shown in the Council Chamber.—There is a great scarcity of young pigs about Halifax this season.—At the *Sun* office lately we were shown a most singular specimen of the rhizome of *Osmunda cinnamomea*, a Nova Scotian fern, which,

by a few artistic touches from Mr. McKay of the Naval Yard, had been made to assume a very fair likeness to a wood-chuck or a beaver—Large quantities of hay have been brought into the city lately, but the price keeps up to about \$19 a ton; in Fredericton it is from \$8 to \$10.—Good pork has lately been selling in Halifax at 8 cents a pound.—The New Brunswick Provincial Exhibition for 1867 will be held at St. John; the rink has been secured for the purpose and the arrangements are nearly completed.—All the horses belonging to the Province have been sold except Lassitude, a fine Chestnut, which it is the intention of the Board to retain.—Mr. Duncan Campbell, of the Emigration Department, is agitating the expulsion of "Stinking Willie" from the fields of Picou; Willie is an unwelcome immigrant.—A Toronto heifer fattened for Christmas beef weighed alive 2700 lbs.—A movement is on foot in England to substitute leather sandals for shoes for children.—In the Western States a good many cattle die from eating smutted corn; ergotted timothy is likewise injurious.—Raphanus caudatus, the Rat Tail Radish, or, as some call it, the Snake Radish, is being largely advertised by English seedsmen; this is the remarkable vegetable fully described by us last year, but which requires to be grown and personally known to be appreciated.—The "Peabody" is a new dwarf English pea, 15 inches high, said to be very fine.—We find the *Sun* office to be a regular *new* "curiosity shop" in the way of freaks of nature and frolics of art; going into the office the other day on a matter of business, we found the editor with a pipe in his hand made out of a birch fungus, *Polyporus betulinus*. We fear it will not last so long as the miscalled briar root, *bruyere*, heather, but it will perhaps have a more powerful narcotic action. The German tinder, of which every student at a German University has a pocketful, has a similar source; botanically it is called *Polyporus ignitarius*.—The London Horticultural Society is to hold a Show at Bury, St. Edmonds, next summer; a local guarantee fund of \$5000 has been raised, besides a large number of cups as prizes. The ladies of Bury are to give one cup.—We have several enquiries for good bulls, Durhams, Alderneys and Ayrshires particularly, and pigs, and shall be glad to hear of any such for sale with prices.—A good many of our Agricultural Societies are purchasing animals and preparing land for seed, with a view to the Provincial Agricultural Exhibition of 1868. The race is not to the swift, but to the farmer who takes Time by the forelock.—The Chester Society has an excellent bull for sale.—Mushrooms were never so scarce as during the past season.—A very valuable grey fox was recently shot near Bedford.

TO CORRESPONDENTS.

A large number of Annual Reports of Agricultural Societies have been received. Such portions of these as are of general interest to the public will be published in the *Journal of Agriculture* as speedily as possible, and as nearly as possible in the order in which they have been received.

Secretaries of Societies that have not sent in to the Secretary of the Board of Agriculture the names of their representatives nominated for the Board in room of those members whose turn it is to retire, are requested to do so without delay.

BULL FIGHTS AT THE PARIS EXHIBITION—Late papers inform us that there are to be six bull-fights at the Paris Exhibition—a relic of cruel barbarism side by side with the products of civilization.

PEARS.—The Massachusetts Agricultural Club have unanimously agreed upon the following as the best twelve varieties of pears, taking all things into consideration, as quality, thriftiness of the tree, value in the market, etc., viz.: First six, the Bartlett, Louise Bonne de Jersey, Urbaniste, Beurre d'Anjou, Sheldon and Seckel; second six, the Onandago (Swan's Orange), Werriam, Doyenne Boussock, Vicar of Winkfield, Paradise d'Automne and Fulton.

ADVERTISEMENTS!

FOR SALE!

A 3 year old BULL, part Ayrshire and part Durham, rather a fine animal.
Antigonish, Nov. 1866. CHAS. BIGELOW.

BULL FOR SALE.

AN ALDERNEY BULL, 4 years old, a fine animal, not cross, and raises fine stock. Lowest price, \$30. Apply to

H. B. MITCHELL,
Sec'y Chester Agri. Soc'y.

TO CORRESPONDENTS.

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