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THE

CANADIAN AGRICULTURIST,

AND

JOURNAL OF TRANSACTIONS

OF THE

Board of Agriculture, Agricultural Associations,

&c. &c. &c.

PUBLISHED MONTHLY,

AND DEVOTED TO

AGRICULTURE, HORTICULTURE, SCIENCE,

AND DOMESTIC ECONOMY.

Illustrated with Engravings.

WILLIAM McDOUGALL, EDITOR AND PROPRIETOR.

VOL. IX.—1857.

TORONTO:
WIMAN & CO., PUBLISHERS.

MACLEAR, THOMAS & CO., PRINTERS, 16 KING STREET EAST, TORONTO

INDEX.

THE

Canadian Agriculturist.

VOL. IX. TORONTO, JANUARY, 1857. No. 1.

VOLUME IX.—INTRODUCTORY.

Most of our subscribers are aware that we long since adopted the rule to begin our subscriptions anew every year. We do not, like most other journals, continue our paper to those who have once subscribed for it until they send an express order to stop. Such a system would soon ruin a paper like the *Agriculturist*, the subscription to which is only 2s. 6d. per annum. The cash must be paid from year to year, and without any expense for collection. The expense of keeping books, and making out and sending bills, would swallow up all the profits of the publication, if its circulation were double what it is. Beginning the year, therefore, without any subscribers (except a few who had paid in advance for 1857), our friends will see that we incur much risk, and almost necessarily some loss, from our not knowing how large an edition to print. True, there has been a gradual increase for the last three or four years, and we have, therefore, some index as to the future. Still, we must run the risk of fluctuations, which may arise from various causes. The attempt of a Yankee speculator, to palm off a reprint of the *Genesee Farmer* as a Canadian work, injured us seriously two years ago; not merely by taking away subscribers from the *Agriculturist*, but by exciting, through his swindling operations, ill-will and prejudice against agricultural papers generally.

As we cannot afford to employ travelling agents, we must trust mainly to the good-will of the agricultural community to support our publication; and, for the reasons above stated, we are obliged to appeal to our friends for their sympathy and favour, at the commencement of every volume. If our only object had been *gain*, we should have given up the publication long ago, and devoted the time, labour, and capital it has consumed, to other and more profitable enterprizes. Nor would we have reduced the subscription price from a dollar to *half-a-dollar* for single subscribers. But, amidst other avocations more or less important and absorbing, we have turned, monthly, to the *Agriculturist*, as to an old and genial friend, with whom we could enjoy a few hours of placid, agreeable, and instructive recreation, unvexed by the schemings of heartless politicians, or the crabbed suggestions of professional disputants. The *Agriculturist* has been from the first "a labour of

love," and we are unwilling to relinquish it, so long as we are conscious that its mission is a good one, and its influence palpable and healthful. If we have one unselfish feeling stronger than another, it is to see our country improve; to see it become "great" in every sense;—great in the freedom of its institutions—in the purity of its morals—in the intelligence of its youth—in the superiority of its husbandry—and, as a consequence, great in its material wealth, and the envy of all for the prosperity, contentment, and general happiness of its people.

With these aspirations we begin another year's labours. We ask the renewed and more energetic assistance of *old* friends, and the hearty co-operation of as many *new* ones as may feel disposed to come up to our help. On the last page we have stated the terms on which we should be glad to receive the assistance of those who may have a few weeks at their disposal during the winter. The prize system was adopted last winter, with considerable success. We have made the prizes larger and more favourable this year. Let no one be discouraged by the notion that others will beat him. The number of persevering competitors will not, probably, be large; and we have made such provision for those who may fail to win a money prize, that they can hardly lose by their efforts to extend the circulation of the *Agriculturist*. Intending competitors should go to work at once. Copies of the present number, which is a fair specimen of those to succeed it, will be sent to any person requesting them.

We hope Agricultural Societies that have hitherto patronized us, will continue their favour; and that others will, this year, try the experiment of supplying their members with a copy of the *Agriculturist*, or some equally useful agricultural journal.

ANATOMY AND DISEASES OF THE HOG.

The hog is still an essential part of the farmer's stock, in most parts of Canada. We intend to give a somewhat detailed history of the animal, and of the several most noted breeds, in future numbers of the *Agriculturist*, collected from the best authorities. We give below a brief account of his *anatomy*, from that standard work, "Youatt and Martin on the Hog." It will be interesting to young farmers.

A very slight acquaintance with that complicated and beautiful structure which we term the animal economy, will be sufficient to convince us that any rational method of investigating or treating disease, must be founded upon an acquaintance with the general construction of the frame, the derangements and alterations to which it is liable, and a concise notion of the various systems or sets of organs of which the body is composed. Without this amount of knowledge it will be impossible correctly to interpret those signs of alteration of structure or function which constitute the symptoms of disease, and indicate its nature and seat.

If we would understand how to regulate the working of some complicated machine, we must not content ourselves with a mere cursory glance at its exterior, but closely inspect the different parts; make ourselves acquainted with their shape, situation, and arrangement; inquire into the principles upon which the whole is constructed, its mode of action, and the offices which each part is destined to perform. Proceeding thus, we shall arrive at a knowledge of the best means of preserving it from injury, repairing any accident that may happen to it, and maintaining it in a fit state for the efficient discharge of the duties it was intended to perform.

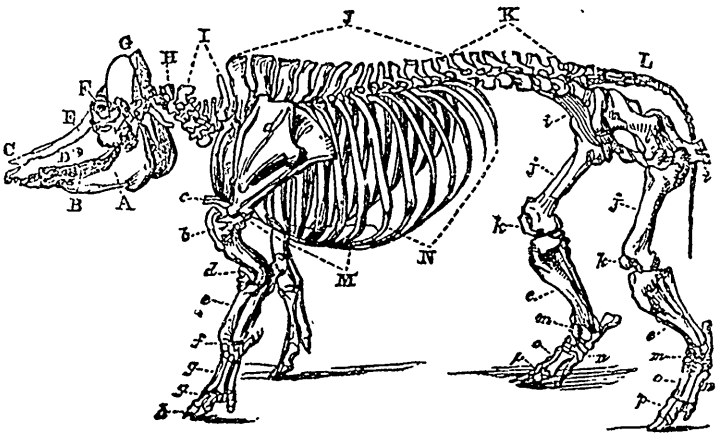
The animal economy consists of parts or organs, differing from each other in structure and function, yet all so intimately connected together, and so mutually dependent upon

each other, that the co-operation of the whole is necessary to a state of perfect health; and if any one part suffers injury, the neighbouring organs sympathise with it to to a greater or less extent, and the working of the whole system is impaired. In order to arrive at a proper understanding of the functions of any one part of the body, we must study the whole; there is no other way of obtaining that insight into disease which will furnish us with a clear idea of the precise nature and seat of a malady, and the course of treatment most likely to be attended with success. The uninformed empyric, who deals about his nostrums at random, is far more liable to put an end to the life of his patient than to arrest the progress of the disorder. Such men should never be allowed to tamper with the meanest animal. It is only to those who, from close study and long practice, have acquired an accurate knowledge of the anatomy, disease, habits, and general management of domesticated animals, that their medical treatment can with safety be intrusted.

It is, however, by no means our intention in this work to give a formal treatise on the anatomy, physiology, and diseases of the pig; but simply to lay before our readers a tolerably comprehensive sketch of the general structure of the animal, and the alterations and evils to which certain parts are liable, and this divested as much as possible of all the technicalities of professional language. A description of the different parts, their form, situation, action, and functions, as well as their admirable adaptation to the ends for which they were designed, will lead us to a consideration of the diseases incidental to them—to the treatment proper to be adopted—and to some account of the various operations which it may occasionally be requisite to perform. In short, we would present them with a practical digest of all that is yet known relative to this too much neglected branch of veterinary science; one that shall serve as a book of reference in cases of doubt or emergency, and aid in introducing those great truths and leading doctrines, which form the groundwork upon which the practice of every branch of medical science ought to be based, into the last strongholds of ignorance and empiricism.

In entering upon the anatomy and diseases of swine, we may be said to take possession of a new and almost untrodden field, one as yet scarcely recognised as belonging to any earlier occupants; and here, in the onset, it will be as well to observe that, careful and lucid as we shall endeavour to make our descriptions, we should only mislead the agriculturist or grazier if we were to encourage him to believe that they will enable him wholly to dispense with a veterinary surgeon. Far from it; we would rather persuade him to seek at once the assistance of the well-educated and scientific practitioner, who, from close study, practical experience, and surgical skill, is qualified successfully to grapple with the most obscure and fatal diseases. We would enable him to assist the veterinery surgeon in his often arduous task, by giving him that information as to the previous symptoms, habits, &c., of the patient, which can alone enable him to proceed with certainty, and will tend to save the life of many a valuable animal; and, lastly, we would warn him against empyrics.

Swine, from having been, until very lately, considered as a subordinate species of stock, have not yet, to any extent, become sharers in the benefits which an improved system of agriculture, and the present advancing state of veterinary science, has conferred upon other domesticated animals. When anything goes wrong in the piggery, the farmer too often, instead of exercising that shrewd sense which he turns to so good an account in almost every other instance, either sends for the butcher, or consigns the sick tenants of the sty to the care of an ignorant "pig doctor," whose whole pretensions to leech-craft rest on the possession of some antiquated recipe, which he uses indiscriminately as a grand panacea for "all the ills swine's flesh is heir to," or on the traditionary lore he inherits from some ancestor famous in his day for certain real or supposed wondrous cures. The treatment adopted in such a case is usually of a very summary nature: a drench is administered, the principal ingredients of which consist in whatever abominations happen to come to hand first when this learned practitioner is summoned. The unlucky patient's tail is next cut off, or he is bled "between the claws," and the "doctor," after some learned clinical remark to the bystanders, swallows the customary mug of beer, and leaves his patient to contend with his disease and the remedy, one or other of which, in most cases, speedily brings the matter to a conclusion, unless, with all the obstinacy inherent in a pig's nature, he lives on in spite of both.



SKELETON OF THE PIG.

THE HEAD.

A. Maxilla inferior, vel posterior—lower jaw.
B. Dentes—the teeth.
C. Ossa nasi—the nasal bones.
D. Maxilla superior, vel anterior—upper jaw.
E. Os frontis—the frontal bone.
F. Orbiculus—the orbit or socket of the eye.
G. Os occipitis—the occipital bone.

THE TRUNK.

H. Atlas—the first vertebræ of the neck.
I. Vertebræ colli, vel cervicales—the vertebræ of the neck.
J. Vertebræ dorsi, vel dorsales—the vertebræ of the back.
K. Vertebræ lumborum, vel lumbales—the vertebræ of the loins.
L. Ossa coccygis—the bones of the tail.

FORE EXTREMITY.

a. Scapula—the shoulder blade.
b. Humerus—the round shoulder bone.
c. Sternum—the breast bone.
d. Ulna—the elbow.
e. Radius—the bone of the fore-arm.
f. Os naviculare—the navicular bone.
g.g. Phalanges, vel ossa pedis—the first and second bones of the foot.
h. Phalanges, vel ossa pedis—the bones of the hoof.

HIND EXTREMITY.

i. i. Pelvis (ossa innominata) the haunch bones.
j. j. Os femoris—the thigh bone.
k. k. Patella—the stifle bone.
l. l. Tibia—the upper bone of the leg.
m.m. Tarsus (one of which is the (N) os calcis)—the hock bones.
n. n. Os naviculare—the navicular bone.
o. o. Digiti, vel phalanges (ossa pedis)—the first digits of the foot.
p. p. Digiti, vel phalanges (ossa pedis)—the second digits of the foot.

THE SKULL AND SNOUT.

As the skull of the hog differs in many respects from that of the horse, sheep, or dog, we shall now proceed to notice those points of difference.

From the point of the occiput to the tip of the nasal bone, the profile presents an almost unbroken sloping line. The position of the orbit of the eye is lateral, giving to the animal a side, rather than a forward range of vision. The space occupied by the orbital processes of the frontal bone in the ox and horse, is in the hog supplied by a cartilage. The frontal bones unite together early, and the parietals appear to form but one piece. The frontal sinuses proceed to the occiput, and are only separated from each other by some longitudinal or somewhat oblique bony layers, which do not entirely intercept communication: these and the sphenoidal sinuses render the cerebral cavity narrow; in fact the size of it is only half that of the cranium viewed from the exterior. The ethmoid and turbinated bones are larger and more fully developed in the hog than in the ox or sheep; in fact they occupy an intermediate grade between those of the horse and dog, being larger than those of the former, and smaller than those of the latter; they are spiral, complicated, cellular, and offer an extensive surface for the expansion of the olfactory nerve; the ethmoidal fosset is very much sunk, of moderate size, divided by a very salient crest, and riddled with numerous holes.

The nasal bones of the hog are situated low down in the face, flattened, and well adapted to the situation and wants of the animal. They are attached to the frontals in a slightly curved direction across the face, by a strong denticulated suture. All com-

munication between them and the lachrymal bones is cut off by the interposition of a projection of the frontals on either side; the suture between them and the superior maxillary is mortised; the anterior maxillary sends up a broad deep process more than half the length of the nasal bones, and the suture here is exceedingly strong. The bony nasal opening is but small, not one-sixth of the size of that of the sheep, and the apices of the bone form one sharp but rapidly widening point, which is carried forward to the anterior extremity of the maxillary. The suture between the nasals themselves is often so intricate, that before the animal is two years old, the upper part of it is perfectly obliterated, and the nasal cavity appears as if only covered by one bone. A very slight comparison of the face of this animal with that of any other, will prove that strength is the object here in view—strength towards the inferior part of the bone. In point of fact, the snout of the hog is his spade, with which, in his natural state, he digs and grubs in the ground for roots, earth-nuts, worms, &c. And to render his implement more perfect, an extra bone is added to the nasal bone. This one is short and trificial, and placed directly before the nasal bones, with which, and with the edges of the anterior maxillary, it is connected by strong ligaments, cartilages, and muscles. This bone has been termed the *spade-bone*, snout-bone, and, by some writers, the *vomer*, from its supposed resemblance to a ploughshare. By it and its cartilagious attachment is the snout rendered strong as well as flexible, and far more efficient than it could otherwise be; and the hog often contrives to give both farmers and gardeners very unpleasant proofs of its efficiency, by ploughing up deep furrows in newly-sown fields, and grubbing up the soil in all directions in search of his living and dead food.

The palatine bones constitute the crescentic and posterior border of the palate and nasal cavity: they do not advance further than just before the last molar tooth, instead of occupying a considerable portion of the palate. The palatine processes consist merely of bony laminæ.

As roots and fruits buried in the earth form the natural food of the hog, his face terminates in a strong muscular snout, insensible at the extremity, and perfectly adapted for turning up the soil. There is a large plexus of nerves proceeding down each side of the nose, and ramifying over the nostril, and in these doubtless reside that peculiar power which enables the hog to detect his food, though buried some inches below the surface of the ground. The olfactory nerve, too, is large, and occupies a middle rank between that of the herbivorous and carnivorous animals; it is comparatively larger than that of the ox: indeed few animals, with the exception of the dog, are gifted with a more acute sense of smell than the hog. To the acute sense of the hog are epicures indebted for the truffles which form such a delicious sauce, for they are the actual finders. A pig is turned into a field and suffered to pursue his own course, and watched. He stops, and begins to grub up the earth—the man hurries up, drives him away, and secures the truffle, which is invariably growing under that spot, and the poor pig goes off to sniff out another, and another, only now and then being allowed, by way of encouragement, to reap the fruits of his research. And how many a school-boy has, by watching a hog along the hedge sides, and driven him away just as he began to dig, secured a fine juicy earth nut!

The muscles, too, of the snout of the hog require some notice. According to Cuvier, there are four principal muscles proceeding to it; the superior of these proceeds from the lachrymal bone, which occupies a rather large rhomboidal space upon the cheek, and its tendon bears upon the snout, but does not approach sufficiently near it to unite with it. The next two are situated immediately beneath, and proceed from the maxillary bone; these are partially united, but their tendons pass on separately, one on the one side and one on the other of the extremity of the snout; and the fourth and smallest passes obliquely beneath the tendons of the others, from the nasal bone towards the insertion of the second and third muscles. These longitudinal muscles are enveloped in annular fibres, which appear to be a continuation of the *orbicularis* of the lips, and give to the snout its extreme flexibility.

THE TEETH.

The hog has fourteen *molar* teeth in each jaw; six *incisors* and two *canines;* these latter are curved upwards, and commonly denominated *tushes*. The molar teeth are all slightly different in structure, and increase in size from first to last: they bear no slight resemblance to those of the human being. The incisors are so fantastic in form as to baffle description; and their destined functions are by no means clear. Those in the

lower jaw are long, round, and nearly straight; of those in the upper jaw, four closely resemble the corresponding teeth in the horse, while the two corner incisors bear something of the *fleur de lis* shape of those of the dog. These latter are placed so near to the tushes as often to obstruct their growth, and it is sometimes necessary to draw them, in order to relieve the animal and enable him to feed.

It is seldom that it becomes necessary to ascertain the age of the hog by inspecting his teeth, nor is it by any means an easy task to do so; but still it may occasionally be interesting, and, with reference to those intended for breeding, important to be able to do so when necessary.

The calculation of the age of the hog, by means of reference to the mouth, has not yet been carried beyond three years: no writer seems to have gone much beyond the protrusion of the adult middle teeth of the lower jaw.

The hog is born with two molars on each side of the jaw. By the time he is three or four months old, he is provided with his incisive milk teeth and the tushes: the supernumerary molars protrude between the fifth and seventh months, as does the first back molar; the second back molar is cut at the age of about ten months, and the third generally not until the animal is three years old. The upper corner teeth are shed at about six or eight months, and the lower ones at about seven, nine, or ten months old, and replaced by the permanent ones. The milk tushes are also shed and replaced between six and ten months old. The age of twenty months, and from that to two years, is denoted by the shedding and replacement of the middle incisors, or *pincers*, in both jaws, and the formation of a black circle at the base of each of the tushes. At about two years and half or three years of age, the adult middle teeth in both jaws protrude, and the pincers are becoming black and rounded at the ends.

After three years, the age may be computed by the growth of the tushes; at about four years, or rather before, the upper tushes begin to raise the lip; at five they protrude through the lips; at six years of age, the tushes of the lower jaw begin to show themselves out of the mouth, and assume a spiral form. These acquire a prodigious length in old animals, and particularly in uncastrated boars; and as they increase in size they become curved backwards and outwards, and at length are so crooked as to interfere with the motion of the jaws to such a degree that it is necessary to cut off these projecting teeth, which is done with the file or with nippers. (*Traite de l'Aye du Cheval, du Pœuf, du Mouton, du Chien, et du Cochon*, par N. F. et J. Girard.)

THE BRAIN.

This important organ is not so large as from an external view of the cranium we should be led to suppose, the frontal and sphenoidal sinuses contracting the limits of the cranial cavity, and rendering it narrow; it is, however, considerably larger in proportion to the size of the animal than that of the ox or sheep, being about 1-500th part of the weight of the animal; while that of the ox is only 1-800th part, and that of the sheep only 1-750th part. The irregularities of the surface, or those prominences and depressions which define the organs in phrenology, are more marked in the pig than in the horse, taking the size of the animal into consideration, but not so much marked as in the dog.

The brain of the hog, like that of our other domesticated animals, is composed of two substances differing materially in appearance and structure; the one is of a pale gray or ashy hue, and termed the *cortical* or *cineritious substance;* and the other from its pulpy nature, and from being found deeper in the brain, the *medullary substance.*

These two distinct component parts of the brain are allowed by all scientific men to be intended for the discharge of two distinct functions. The mind or reasoning power is supposed to reside in the cineritious portion; and hence the preponderance of that substance in the human brain; while the medullary portion is merely the recipient of outward impressions upon the senses. There is very little difference between the proportions of these two substances in the brain of the hog and that of the sheep; if anything, the hog has more of the cineritious portion than the ox; a proof, physiologists would say, that his reasoning powers or moral faculties are greater. There are anecdotes enough to prove that the hog is possessed of memory, attachment, and social qualities; but at present the system of treatment affords no scope for the development of any but mere brute and gluttonous instincts.

THE CHINESE SUGAR CANE.

A specimen of this plant, which is attracting much notice in the United States, was exhibited at our Provincial Show at Kingston, last September, by Mr. S. J. Lyman, of Montreal. By some oversight or other it was not reported on by the Judges. It was grown in the vicinity of Montreal; and although the seed had not fully ripened, the plant had attained to a great size, indicating that it might, by proper culture, be fully matured as far north as this Province. It is stated, indeed, that Mr. Eliot, of Sandwich, on the Detroit river, had succeeded in bringing it to perfection last Fall, and secured a considerable quantity of good, sound seed, which he intended for distribution. We shall, therefore, know something more decided next season, in regard to the economic uses of this plant, and its adaptation to the climate of this country.

This plant, as its popular name indicates, is a native of China; but for several years it has been successfully cultivated in South-Eastern Caffraria, whence it passed into France and Algeria: in the latter it is brought to great perfection. It has succeeded well—considering the limited knowledge of its habits yet attained—in the district of Columbia, and the middle and Southern States; and even as far north as the New England States, it has been so far matured as to yield a considerable amount of crystalised sugar, which appears to increase in proportion to the diminution of the latitude. In its appearance, habits, and culture, it may be said to resemble Indian corn, and may probably be raised to advantage within the usual limits of the latter. From all we can learn, it appears to be excellently adapted as a forage crop—cattle and pigs devouring the leaves and stalks with the greatest avidity.

The following is from a United States paper:—

New Sugar Plant.—The Chinese sugar cane seed, distributed by the Patent Office last spring, promises to be a complete success at the north. A package of seed was planted in Bucks county, Pa., latitude 40½ degrees north, and has arrived at maturity. The maximum height of the stalk was ten feet, and the product in grain much greater than any cereal under cultivation. The stalk is perfectly green after the seed has reached maturity, and the saccharine principle is then fully developed. The juice, which is most abundant, is very saccharine—quite as much so as the variety cultivated at the south. Whether the juice contains the same amount of crystallisable sugar, remains to be tested. Should it be found equal to ordinary cane in that respect, a new era in the agriculture of the north will be inaugurated, and an immense breadth of land be devoted to its culture as soon as the necessary seed can be obtained, which will require another year at least. The seed having been disturbed late in the spring, which was cold and backward, there is good reason to believe that much planted did not reach maturity. Should the plant fail, so far as the manufacture of sugar is concerned, yet its value as a forage crop cannot be over-estimated at the north. Cattle, horses, and hogs eat the entire stalk with avidity, and no doubt would fatten rapidly on it. The seed, which is small, has a thin black hull, which can be taken off, leaving a fine white flour as the residue. We have no means at present of estimating the value of this flour as an article of food, but no doubt its merits will be fully investigated. The culture required for the plant is similar to that adopted for Indian corn when planted in rows, and the seed should be put into the ground about the same time. As it is a quick and strong growing plant, it should be well manured.

FARM HOUSES.—THE ART OF PLANNING THEM.

The art of planning Farm Houses, like that of subdividing farms, should be reduced to a regular system. It is most commonly a mere chance process—a sort of hap-hazard arrangement of rooms, doors and entries, without the observance of any general rules.

When a farmer is about to erect a house, he should in the first place make two leading inquiries. 1. What are the accommodations I want? 2. What is the amount of means for providing them? In order to assist in answering these questions properly, it may be well to classify houses, from the most simple and cheap, to the most expensive and complex But it is necessary in the first place, to examine which of the apartments of a dwelling are most indispensible, and which are of various degrees of secondary importance.

Every house must have a kitchen or place for cooking food, a living room for day occupancy, and a lodging room for night—and a pantry and store-room. In the simplest log-hut or board shanty, one room is made to serve all these purposes, the pantry being merely a cupboard, or tier of shelves against the wall. One step above this is the separation of kitchen and dining room, from the bed-room; and still better, is the appropriation of three distinct rooms for these purposes. As we continue to ascend in the scale, we find at last, that the largest and most complete houses have most of the following apartments, although all may not be found in any single house:—

1. Kitchen, with appended iron closet, store-room, dairy, wood-room, and laundry.
2. Bed-rooms, including nursery, and other sleeping apartments.
3. Dining-room.
4. Library, or office.
5. Bath-room.
6. Breakfast-room, parlor, sitting-room, or living-room.
7. Drawing-room and conservatory.
8. Entrance hall and veranda.
9. Cellar.

Now, going back to the two leading inquiries already mentioned, let every one about to build, ask himself: How many of these different rooms will be indispensable for me; and what can I expend in procuring them? We suppose that no man, even with quite moderate means, will be satisfied without,

1. Kitchen and small pantry.
2. Parlor.
3. Nursery or bed-room on the ground floor.
4. Small entry.
5. Bed-rooms with closets above stairs.
6. Cellar.

The cost of a house containing all these will of course depend much upon the nature of the materials, their cost, the size of the rooms, and the cheapness of the finish; but with a plain frame or wooden house, they could be had from six to twelve hundred dollars.

A larger and more complete farm house, costing two thousand or more, would contain

1. Kitchen, pantry, store-room, and iron closet.
2. Dining-room and china closet.
3. Parlor or drawing-room.
4. Nursery or bed-room below stairs, with ample closets, and with bath-room attached,
5. Bed-rooms above stairs, with closets to all.
6. Office or library—which may be simply a small business room, for keeping account books, settling with workmen, making bargains, &c.; or a more complete library, with book-cases and newspaper closets, and even cases for minerals, dried plants, shells, stuffed birds, &c., according to circumstances.
7. Verandas.
8. Cellar.

After the greater or less number of those rooms has been fixed upon, according to wants and circumstances, the next step is to arrange them in the most convenient and economical manner. This is a difficult task to a person of inexperience, but it may be greatly assisted by observing the following rules, and by an examination of published plans, such for instance as we are about to give in the present number of the Register, or which have been furnished in the former numbers.

1. Let the kitchen (the most important apartment) always be on a level with the

principal floor—and for strong light and free ventilation, it should have, if possible, windows on opposite or nearly opposite sides.

2. The pantry or dish-closet should be between the kitchen and dining-room, and easily accessible from both.

3. There should be a set of *easy* stairs from the kitchen to the cellar, and also an outer set into the cellar for admitting barrels, &c.

4. More attention should be given to the arrangement and convenient disposition of such rooms as are in constant use, than those but occasionally occupied. Hence the kitchen and living room should receive more attention on the ground of convenience than the parlor.

5. Every entrance, except to the kitchen, should be through some entry or hall, to prevent the abrupt ingress of cold air, and for proper seclusion.

6. Let the entry or hall be near the centre of the house, so that ready and convenient access may be had from it to the different rooms; and to prevent the too common evil of passing through one room to enter another.

7. Place the stairs so that the landing shall be as near the centre as may be practicable, for the reason given for the preceding rule.

8. Let the partition of the second floor stand over those of the lower, as nearly as may be, to secure firmness and solidity.—*Annual Register.*

FARM CAPITAL.

The following remarks on Farm Management and Capital are from the *Annual Register* issued by Mr. Tucker for 1857:—

The great leading error of most of the young farmers of our country is in not "counting the cost." The first thing they do is to expend not only all their capital in buying as large a farm as possible, but most usually they run largely into debt. Their desire for large possessions leaves them nothing to stock and improve the farm, and hence for many years, while loaded with a discouraging debt, their farms remain poorly provided with animals, with good implements and with a good supply of manure. They are therefore compelled to perform all their operations to a great disadvantage; their small crops afford no net profits, and they become discouraged and lose the energy and enterprise essential to success. These causes are the most fruitful source of poor and slip-shod farming in America. It is not very difficult, in traversing the country, to point out among the various occupants of the land, from the appearance of the premises, such as are burdened with heavy debt, from those who have a good supply of spare capital.

It has been remarked that in England, where taxes are levied on every thing that a man wears and every thing that he eats, and where the cultivator must farm well or not at all, the amount of capital to begin with must be about as great in *renting* a farm, as in *buying* one in the best farming districts of our own country. The result is, every thing is done in the best manner; and if farmers are *compelled* to farm well there or else become bankrupt and starve, why may we not adopt from *choice* the same advantageous course in this country,—to lay up handsome profits against a rainy day,—and be enabled to enjoy the rare gratification of feeling able to give liberally to charitable or useful objects, without deranging one's financial concerns?

One great reason why young (and often old) farmers are so poorly supplied with surplus capital after buying land, is, that they have never estimated how much they will want. An estimate of this sort would prevent many heavy purchases of farms and the entire consumption of means,—it would induce smaller outlays in land, and larger expenditures in the means for making heavy net profits. We therefore purpose, by way of affording some assistance on this subject, to point out what a moderate farmer actually and indispensably requires besides a farm and *good buildings.*

The *average* of farms in this country will not perhaps exceed one hundred *improved* acres. The following will be required for commencing operations to advantage.

Live Stock.—This will vary much with the character and quality of the land, its connection with market, &c., but the following is a fair average, for fertile land, and the prices an average for different years, although lower than they have recently been:—

3 horses, at $100	$300
1 yoke of oxen	100
8 milch cows, $25	200
10 steers, heifers, and calfs	100
20 pigs, $5	100
100 sheep, $2	200
Poultry, &c.	10
	$1010

Implements.—To farm *economically*, these must be of the best sort, especially those that are daily used. A plow, for instance, that saves only *one-eighth* of a team's strength, will save an hour a day, or more than *twelve* days (worth $24,) in a hundred—an amount, annually, that would be well worth paying freely for the best plow. A simple hand-hoe, —so well made that it shall enable the labourer to do one hour's more work daily, will save twelve days in a hundred,—enough to pay for many of the best made implements of the kind. These examples are sufficient to show the importance of securing the best.

2 plows fitted for work, and 1 small do	$25 00
1 cultivator	7 00
1 harrow	10 00
1 roller	10 00
1 seed planter	15 00
1 fanning mill, 1 straw cutter	40 00
1 root slicer	28 00
1 farm waggon, 1 ox-cart, one-horse cart, with hay racks, &c	180 00
Harness for three horses	50 00
1 shovel, 1 spade, 2 manure-forks, 3 hay-forks, 1 pointed shovel, 1 grain-shovel, 1 pick, 1 hammer, 1 wood saw, 1 turnip-hook, 2 ladders, 2 sheep-shears, 2 steelyards, (large and small,) 1 half-bushel measure, each $1,	20 00
1 horse-rake	8 00
2 grain-cradles, 2 scythes	12 00
1 wheel-barrow	5 00
1 maul and wedges, 2 axes	6 50
1 hay-knife, 1 ox-chain	6 00
1 tape-line, for measuring fields and crops	2 00
1 grind-stone	3 00
1 crowbar	2 00
1 sled and fixtures	30 00
Hand-hoes, hand-rakes, baskets, stable lantern, currycomb and brush, grain-bags, &c., say	15 00
	$474.56

The adition of a subsoil plow, sowing machine, mower and reaper, thrashing machine, horse-power for sawing wood, cutting straw, &c., would more than double the amounts but young farmers may hire most of these during the earlier periods of their practice. A set of the simpler carpenter's tools, for repairing implements in rainy weather, would soon repay their cost.

Besides the preceding, the *seeds* for the various farm crops, would cost not less than $75; hired labour for one year, to do the work well, would probably be as much as $350 and food for maintaining all the domestic animals from the opening of spring until grass, and grain for horses till harvest, would not be less in value than $100 ; 525 in all.

For domestic animals	$1010 00
" implements	474 50
" seeds, food and labor	525 00
	$2009 50

That is, *two thousand dollars* are needed the first year, for stocking and conducting satisfactorily the operations of a good hundred acres of improved land; several items will doubtless be supplied or added to the list by the recollection of every farmer.

This sum will no doubt seem frightfully large to some who have never made a similar estimate: we would therefore request such to sit down and see how much they can reduce the amount, for vigorous and energetic farming. They will probably be surprised to find

how few of the items they can spare without inconvenience or loss; and the question will arise, how can we command so large an amount? We answer, Buy smaller farms—expend less in land, and more means to till it *well*. Much as we dislike running into debt, it is better to borrow money for the latter, than the far more common practice of borrowing money for land. For, by running in debt for land, followed by bad tillage, the young farmer will be long in extricating himself from a depressing load; while on the contrary, movable capital will enable him to perform everything at the right moment of time, and in the very best manner. He will not be too poor, to be economical, but will often save much by a little timely outlay.

A single example will show the economy of a prompt use of means. Two farmers had each sown a crop of rutea bagas. The first who was always enabled to take time by the fore-lock, hoed the young weeds when only an inch high, with very little labour, and the young plants grew vigorously. The other, being crowded in his work from deficient calculation, and consequently deficient help, was compelled to defer his hoeing ten days, when the weeds had grown six inches high, and had smothered his crop. The labor was more than triple the former, and the crop greatly inferior. We could multiply instances of all kinds bearing in the same direction, and showing that the farmer who in his eagerness to possess many acres, weakens his mean for present action, not only adopts the worst kind of economy, but compels himself to continue in this losing system for years to come.

AGRICULTURAL EXPERIMENTS.

A great many valuable hints and suggestions for practice may be learned from agricultural papers. It is not uncommon to hear farmers remark that they have derived more pecuniary advantage from a single article, than the price of the paper for many years. But to prevent disappointment, farmers must always use their judgment; circumstances vary so greatly, that what is highly beneficial in one case may be ruinous in another. Great mischief is done by looseness, carelessness, or partiality in reporting experiments; a single trial of a crop, sown by guess-work, cultivated at random, and measured by a hasty glance of the eye, is often considered decisive by the inaccurate farmer. He sees a little, presumes a great deal, and jumps to a conclusion, when perhaps if he had taken the twenty other operating causes into the account, there would have been no conclusion at all. Opinions are sometimes formed and facts afterwards sought to support them; the report of such facts is not worth the ink that records them. It is no wonder that some, are disheartened by these, from all trials.

HARDY PEARS FOR THE NORTH.—Seckel, Flemish Beauty, Giffard, Virgalieu, Sheldon Lawrence, Winter Nelis; *on pear stocks*. Louise Bonne Jersey, Tyson, Angouleme Winkfield, Gisband's Summer, Glout Morceau, *on quince*.

APPLES FOR COLD REGIONS.—Red Astrachan, Sops of Wine, Early Joe, Gravenstein, Oldenburgh, Porter, St. Lawrence, Fameuse, Ribston Pippin, Baldwin, Jonathan, Peck's Pleasant, Pomme Grise.

APPLES FOR MICHIGAN.—At the recent meeting of the Michigan Fruit Grower's Association, the following apples were recommended for general cultivation in that state, viz: Swaar, Rambo, Yellow Bellflower, Esopus Spitzenburgh, Rhode Island Greening and Belmont Waxen. The Baldwin, although found to be variable, and often badly affected by dry rot, was on account of its many excellent qualities, also similarly recommended.

PEARS.—At the same convention the following pears were recommended for general cultivation:—Glout Morceau, Flemish Beauty, (for light soils,) Stevens' Genesee Dearborn's Seedling, Swan's Orange, (Onondaga,) and English Jargonelle. The latter must be picked and house ripened, or it rots at the core and becomes worthless.

MANURES FOR FRUIT TEEES.—The best manure for fruit trees, under usual circumstances, are composts made of stable manure, turf, muck, or loam, with a small quantity of ashes, and still less lime. The addition of guano, bone manure, &c.; increase its value, The proportions may be one-third yard manure, over one-third turf, loam, or peat, and a tenth ashes, a twentieth guano or bone manure. The special manures applied separately, *sometimes* produce evil results, but not usually.

Number of Plants or Trees that can be planted on an acre of ground, at the following distances apart, in feet.

Distances apart.	No. of Plants.	Distances apart.	No. of Plants.
1 by 1	43,560	7 by 7	888
1½ " 1½	19,360	8 " 8	680
2 " 1	21,780	9 " 9	537
2 " 2	10,890	10 " 10	435
2½ " 2½	6,969	11 " 11	360
3 " 1	14,520	12 " 12	302
3 " 2	7,260	13 " 13	257
3 " 3	4,840	14 " 14	222
3½ " 3½	3,555	15 " 15	193
4 " 1	10,890	16 " 16	170
4 " 2	5,455	17 " 17	150
4 " 3	3,630	18 " 18	134
4 " 4	2,722	19 " 19	120
4½ " 4½	2,151	20 " 20	108
5 " 1	8,712	24 " 24	75
5 " 2	4,356	25 " 25	69
5 " 3	2,904	27 " 27	59
5 " 4	2,177	30 " 30	48
5 " 5	1,742	40 " 40	27
5½ " 5½	1,417	50 " 50	17
6 " 6	1,210	90 " 60	12
6½ " 6½	1,031	66 " 66	10

Multiply the distances into each other, and divide it by the square feet in an acre, or 43,560, and the quotient is the number of plants.

VELOCITY OF WIND.

Wind is air in motion. Its force depends on its speed. When its motion is slow, it constitutes the soft, gentle breeze. As the velocity increases, the force becomes greater, and the strong gale sweeps round the arms of the wind-mill with the strength of many horses and huge ships are driven swiftly through the waves by its pressure. By a still greater velocity of the air, its power becomes more irresistible, and solid buildings totter, and forest trees are torn up by the roots in the tracks of the tornado.

The force of wind increases directly as the square of the velocity, Thus a wind blowing ten miles an hour, exerts a pressure four times as great as at five miles an hour, and twenty-five times as great, as at two miles an hour. The following table exhibits the force of wind at different degrees of velocity :—

Miles an hour.	Pressure in lbs on a square foot.	Description.
1	.005	Hardly perceptible.
2	.020	Just perceptible.
3	.045	
4	.080	Light breeze.
5	.125	
6	.180	Gentle, pleasant wind.
7	.320	
10	.500	Pleasant, brisk wind.
15	1.125	
20	2.000	Very brisk.
25	3.125	
30	4.500	Strong, high wind.
35	6.125	
40	8.000	Very high.
45	10.125	
50	12.500	Storm or tempest.
60	18.000	Great storm.
80	32.000	Hurricane.
100	50.000	Tornado, tearing up trees, and sweeping off buildings.

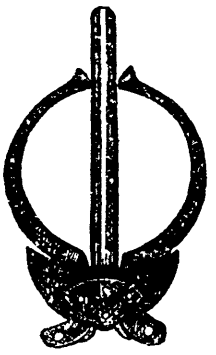
WHEAT, FROM WHENCE DERIVED?

Our readers will probably remember some experiments having been made on the transformation of wheat, by repeated cultivation of a grass called by botanists Ægilops ovata and a native of those countries bordering the Mediterranean, which have been considered the original home of the cereals from time immemorial. The experiments were made by M. Fabre, and a translation of his paper respecting them was published in the *Journal of the Royal Agricultural Society.* We confess that the facts advanced by M. Fabre appeared to us conclusive, and to have been conducted so as to secure, as far as possible, immunity from hybridization, by carrying on the experiments amidst vineyards, at a distance from the fields of wheat. It appears, however, that there exists a difference of opinion on this subject among botanists, both in this country and on the continent. In England the majority of them were disposed, we believe, to adopt the nonhybridizing view of the question while in Germany and France the opposite opinion appears to have prevailed.

A writer in the columns of a contemporary lately stated that Dr. Regel, the Director of the Imperial Botanical Garden at St Petersburgh, has recently informed him that having repeated the experiments of M. Fabre, he has satisfied himself that the reported transformation is merely the effect of repeated process of hybridization. Dr. Regel, it appears, went directly to the experiment of hybridizing the ægilops with the pollen of wheat. He declares the result to have shown that there is nothing of a gradual transition from one plant into another, but that by hybridization he obtained from Ægilops ovata a plant exhibiting a much greater affinity to wheat than to ægilops. The plants did not differ, he says, the least from each other: there was nothing like a gradual change.

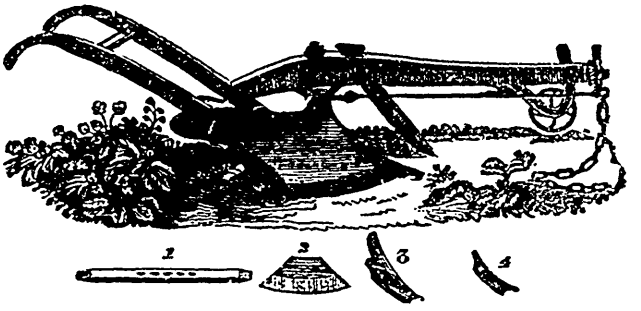
With respect to the cases stated in M. Fabre's experiments of other transitions, D. Regel considers them as giving rise to the following questions:—1. Whether there are in reality any of these transient forms? 2. Whether they have not been produced by the return of the hybrid towards one of its parents? And lastly, Whether they are not to be explained by the repeated fecundation of the hybrid by one of its parents? In expressing himself in favor of the last supposition, he admits however that he has not himself seen the latter transition. He admits also that a hybrid when perennial cannot returnt o one of its parents by sexual propagation, but contends that it is different with the sexual propagation, where experiments with newly-raised hybrids, fertile even in their pollen, must decide, and can only decide the question. Dr. Regel further adds, that he has left some specimens of his hybrids between wheat and Ægilops in isolated places, where they may fecundate themselves; while he has fecundated some again with Ægilops, and others with bearded wheat. He then adverts to a theory started by Dr. Lindley, to the effect that the Ægilops ovata and Triticum vulgare are extreme forms of one species. This opinion he considers to be disposed of by his hybrid having pollen which is entirely sterile. At the same time, he admits the question to be still open whether this hybrid may not fertilize itself by means of its own pollen.

At the late meeting of the British Association, Professor Henslow read a part on some read some experiments which he had made for the purpose of deciding the question. These had so far succeeded in changing the character of Ægilops squamosa as to lead him to conclude that the original statement of M. Fabre that Ægilops ovata was the origin of Triticum sativa was not altogether without foundation. He exhibited specimens in which Ægilops squamosa had undergone considerable change, but he had not yet succeeded in obtaining the characters of Triticum sativa of wheat. For ourselves we confess that, putting aside the questions in physical botany to which this alleged transformation of Ægilops into wheat gives rise, we were disposed to treat the experiments of M. Fabre as offering a solution to a very puzzling question, that of the native country of wheat in a wild state. The fact that Ægilops is indigeneous to those countries bordering the Mediterranean, which have from time immemorial been known as the birth-place of wheat and the early scene of the exploits of Ceres, appeared to furnish strong *a priori* evidence in favour of M. Fabre's researches. If wheat is not derived by cultivation from Ægilops, from what grass is it derived; and if not from any, were is its native country? Who ever saw wheat wild, except when it had escaped from the haunts of man? Who ever saw it, any more than a wild red cabbage, or a cauliflower, or a wild swedish turnip? Wheat must have had some wild original; and if it is not Ægilops, what is it?—*Farmer's Magazine.*



PATENT BOW PIN.

This cut represents a new Yankee invention, that may recommend itself to our Canadian ex-drivers who are liable to lose their pins. The outside circular parts are opened from the centre or body part by a spring, when the latter part is put through a hole in the bow, and the spring closes the circular parts again, clasping the bow on both sides, and prevents all possibility of dropping out.



SELF-SHARPENING STEEL-POINTED PLOUGH.

Ploughs of American pattern and manufacture are being every year more extensively used in Canada. They are cheap; and when made at such establishments as Ruggles, Nourse & Co., Boston, where the best second-growth timber is used, they are very strong and durable. The cut represents a plough very highly spoken of by those who have used it. It is of the same form and general construction as the celebrated Eagle Plough, with the exception that the point and share are in two pieces, which are made on an improved self-sharpening principle.

The point, as shown detached at No. 1, is simply a bar of iron sharpened at each end, about twenty inches long, and which passes upward into the body of the plough, where it is confined with one bolt. As it becomes shorter, and worn on the under side, it is readily moved forward and turned the other side up, thus always presenting a sharp point of full length and proper shape. When one end is worn off five inches, the other end is placed forward, and performs a like service. The wing or share, as shown detached at No. 2, is made of either wrought-iron with steel edge, or of cast-iron, and is also reversable, being used either end forward, or either side up.

Both point and share are so very simply constructed, that any blacksmith can replace them at trifling expense, or perpetuate the use of the original by new-laying with steel, as they become worn.

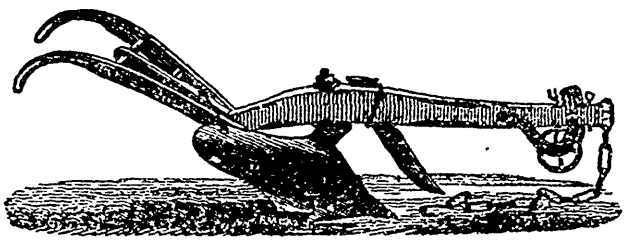
There is a coulter of cast-iron a little back and above the point, shown detached at No. 3, forming part of a cap, shown detached at No. 4, which cap protects the

shin or forward part of the mould-board. It is confined in its place by the same bolt that confines the point, and is cheaply replaced when worn. The manufacturers state that—

"This is much less expensive, and in many kinds of soil quite as serviceable as a wrought coulter or cutter, as shown by the cut above. They are sold with one or both, or with simply the cap.

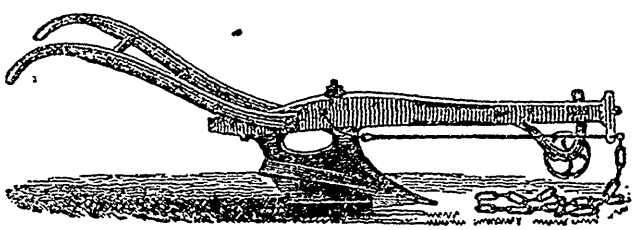
"Self-sharpening points and shares have been considered objectionable, inasmuch as they have not possessed sufficient strength, owing to their complicated *construction* of *cast metal;* but a single glance at these ploughs will convince any person, by the simple construction of the point and share of *wrought-iron* and *steel*, that they combine strength and durability unequalled by any other form or construction, and that they are kept in repair at much less trouble and expense.

"The point can be used projecting more or less forward, causing the plough to incline more or less into the ground, as different soils may require."



SWIVEL OR HEAVY ROAD PLOUGH.

The cut represents a Swivel or Heavy Road Plough. It is made very strong, and is especially designed for the roughest road work, being of a size and capacity to do work requiring the draught of four to eight cattle. It is extensively used by road makers in the United States, being considered by them a great labour-saving implement. It will break the ground, and give the general shape to a road in the newest or most difficult soils, ploughing among roots, stumps, and stones, without breaking, and making a very imposing appearance with six or eight oxen hitched to it. For the annual repair of roads, it is most valuable, as it will speedily and with great facility open the ditches at the sides, and furnish earth to shape up the road-track.



SUBSOIL PLOUGH.

In the year 1840, Ruggles, Nourse, Mason & Co., imported from Scotland the first Subsoil Plough ever used in the United States. Although an effective implement, it was too complicated, cumbersome, and costly to suit the American farmers; and the importers, therefore, made a plough of equal capacity, but much lighter, of

simple construction, better adapted to practical use, and of a less price. It being well received by the public, the manufacturers were induced to make several sizes, which have been used with satisfaction in different sections of the country.

The subsoil plough follows directly after and in the channel made by the plough turning the surface soil, loosening and pulverizing the lower soil to any desirable depth, without bringing it to the surface. The subsoil plough is specially valuable in lands where the top soil rests upon hard-pan but a few inches below the surface, and in lands of a stiff clay or other tenacious soil. Although, at first thought, it may seem a paradox, yet in the working of such lands the use of the subsoil plough is of great advantage, both in dry and wet seasons. If permitted to do so, plants will, in a dry season, extend their roots deeply into the earth; and by use of the subsoil plough, the stiff soil or hard-pan is opened and pulverized, so as to promote the ascent of moisture from below, as well as to permit the roots of vegetation to push lower down, and away from the more parching influence of the sun. Again, lands of a stiff, compact soil, are, in a wet season, naturally too cold, clammy, and moist; but by being deeply loosened and opened, the excess of moisture filters below—the surface soil thus relieved is made light, mellow, and warm, and the crops prosper accordingly.

TO PREVENT A COW SUCKING HERSELF.

To the Editor of the Agriculturist.

Dear Sir,—I have a very fine cow that has contracted the habit of sucking herself. We have tried various plans to prevent it, with more or less success. Making her wear a wooden frame on her neck, has succeeded pretty well, but this prevents her licking herself, which is said to be injurious. Can you tell me of any better plan? I did not observe anything in the last volume of the *Agriculturist* on the subject, and on looking over the Index, in the last number, I see no reference to it. Be so good as to continue the paper. I would not be without it for many times its cost.

Trafalgar, Dec. 23rd. Respectfully yours,

A. W.

REMARKS—During the winter, a "fine cow" should be stabled the greater part of the time. The old-fashioned method of securing cattle in the stable between two upright posts or "stanchions," will prevent your cow from sucking herself while within doors. If she is let out for water and exercise immediately after being milked, she will not be able to rob you to any great extent. The best remedy we know of for summer use, is the following:—Prepare a hickory stick eight inches long and half an inch in diameter, leaving a slight swell each side of the centre; and thrust this stick through a slit in the nose. The stick will project each way horizontally, and if properly made it will not come out. She will find it difficult to suck herself with this ornament in her nose. The moustached dandy, who attempts to eat soup without dipping his hirsute appendage in the spoon, is in a very similar predicament.

NEW PRAIRIE PLOW.

We see in the western papers notices of a newly invented plow, which promises to be a very valuable acquisition, if what is said of it be correct. Mr. E. Abbott, former editor of the *Valley Farmer* at St. Louis, writes to that paper as follows:—

"This afternoon we rode out on the prarie to witness the first experimental trial of a new prairie plow, the first of which has just been finished at the Eagle Foundry in this city. Mr. Jesse Frye, its inventor and builder, is a most ingenious mechanic, and by the production of this implement has put himself in the front rank of inventors. The plow of which we speak is styled 'An adjustable anti friction carriage plow: and when we say that with two horses attached to it, a furrow twenty-four inches wide and five inches thick was rapidly turned in the toughest kind of prarie sod, and that too in ground that had been beat down by cattle, and dried by the summers drouth, until it was as hard and as dry as ground could be, our readers will not think us extravagant when we style it one of the greatest inventions of the age. Moreover in this trial, the driver of the team and the inventor of the plow, both heavy men, rode at their ease on a seat prepared for the purpose, and placed over the plow. It appears a very simple machine easily adjustable, and not liable to get out of repair. An ordinary plow-man can ride at his ease, manage the plow, and drive without difficulty. A select number of the best mechanics and scientific men of this city, all without a dissenting voice, pronounced themselves wonderfully pleased at this success, and considered that it would save at least 75 per cent. of the power usually employed in breaking prairie. Several farmers present affirm, that with a team of four horses, they could easily break four acres per day of prarie, than they could two acres with an ordinary breaking team of twelve oxen. Some of the peculiarities about this plow are:—

"*First*—It is supported on a carriage which runs on four wheels. This carriage takes all the *weight* of the plow, leaving nothing to be dragged on the ground. It also overcomes all the *land side* friction— the share being held firmly in its position by its attachment to the frame of the carriage, cannot press upon the land sids. Thus when the plow is out of the ground, a boy twelve years old can move it all about the lot, a feat not easily performed by two men with an ordinary breaking plow.

"*Second*—The mold-board is composed of anti-friction rollers, which are arranged in most scientific manner, so as to lift the turf and turn it over, with the least possible resistance, thus overcoming nearly all the friction from this operation.

"We believe Mr. Frye has perfected an improvement in the plow which is of immense importance to the farmers of our country, and as the principle is equally applicable to plowing all kinds of land, we predict a great change in the manner of performing this hitherto laborious but necessary part of farm labour. We learn from Mr. Frye that he will visit several of the fairs this fall."

We add to the above the following from the Illinois *Farmer*.

"On the 16th of August there was a public trial of this plow on the Sangamon Bottom Prairie, at what is called 'Marsh's Ferry.' The trial was made on what is called swamp ground, the toughest piece of ground that could be found in the whole prairie. The plow was put into the ground about three o'clock and was drawn by four horses. It did the work well, cutting some twenty-six inches. The ground was, of course, baked hard. It was hard work for the horses; but it was conceded by good farmers present, that eight yoke of cattle would not have drawn a common plow, cutting the same width which was cut by the Adjustable Plow, with anything like the ease with which the horses did their work.

"At the close of the trial, the company present was organized into a meeting, and the following resolution passed:—

"Resolved, It is the sense of this meeting that the 'Adjustable Anti-Friction Carrriage Plow,' invented by Mr. Jesse Frye, is an important improvement on any plow now in use, and will do more with less power than any plow with which we are acquainted."

We need only add, that since the above noticed trial of the plow was made, it has been subjected to several other trials, and in all cases has been successful. The exact amount of the power saved cannot be ascertained except by the use of the dynamometer.

To see two or three horses breaking prairie with a plow cutting twenty-six inches—the plowman seated comfortably on a seat above the plow—having the team and the plow at perfect control—is a gratifying and wonderful sight, even in these days of progress.—*Wisconsin Farmer.*

AGRICULTURAL SOCIETIES—ONE BENEFIT OF EXHIBITIONS.

A recent number of the Albany *Country Gentleman*, gives some extracts from the address delivered before an Agricultural Society, in which some of the advantages of these Institutions are mentioned; which, in our opinion, are worthy of repetition. Few, comparatively, of our farmers who refuse to subscribe *a dollar* a year, to support their Township or Country Society, stop to think how much benefit these Societies have already conferred upon them in the improved implements they have been the means of introducing. If they did, they would not allow these Societies to languish, as they often do, notwithstanding the public grant so liberally bestowed, for lack of popular support. Read the opinions of an intelligent American farmer, and think twice before you refuse your subscription this year.

In speaking of the want of interest among so many farmers in these organizations for the promotion of good husbandry and rural industry, and the benefits which flow from their exhibitons. The gentleman referred to says:

"These fairs, besides furnishing many valuable hints in regard to field crops and cattle raising, afford to farmers an opportunity to examine, compare, and test the various improved implements of husbandry which the mechanical ingenuity of the day is supplying. It is to be expected that an age so fertile in inventions as the present, will be distinguished by some valuable discoveries in the application of machinery to the various arts of agriculture, and by the multiplication of implements which are *not worth* possessing. And the fact corresponds with the expectation. There are improvements, more or less valuable, in every customary implement of the farm—inventions such as the drill, the reaper, and the thresher, which lighten and facilitate the labors of the farmer; whilst there are, also, new implements and modifications of old ones that *promise fairly*, but fail in the performance—that excite hopes only to disappoint them."

Such worthless or imperfect implement must be peddled off among the less informed and less discriminating of the farming community. The same speaker observes:

"If a farmer shuts himself up in the solitude of his own home, (never attending exhibitions where implements are tried and tested,) the agent of the worthless machine is sure to find him out, and to impose on his ignorance. Then comes the vehement denunciation of the Yankee cheat, and the indignant rejection of all applied machinery. If that farmer had attended the last fair, and had observed the different patterns of instruments—witnessed and compared their practical operation, and heard from others the testimony of experience, he coud not have been imposed upon, and would have been saved the fruitless waste of money and of wrath, and would have gone home, if not with an improved tool, with improved ideas no less valuable.

"The agricultural fair tries every man's work, of what sort it is; and enables the farmer to prove all things, and to hold fast that only which is good. It is the cure of empyricism and imposture."

This advantage of agricultural exhibitions is one of much value, as the wages of laborers are so high, and so likely to continue high, that the farmer must depend more and more on labor-saving machines.

This advancement of the laborer's wages we are not disposed to regard as an evil; or if an evil, one, at least, with several counter-balancing advantages. One of these is that high wages promote the independence of the laborer and the comfort of his family. Besides some incidental advantages of this kind, the direct effect of high wages on agriculture must be favorable in the end, inasmuch as they will compel the farmer to practice a more careful husbandry. When a farmer has to pay high wages

for labor, he cannot afford to let his manures go to waste, or his fields to run to brambles and weeds, or his cultivated fields to produce less than half of what they are capable of producing. And from this cause, also, will arise a growing demand for machinery, which will excite an inventive genius and speculating disposition, flooding the country with implements of all kinds, good, bad, and indifferent. Now the more the farmer is driven into improved culture, and the employment of labor-saving machines, the more will he need, the counsel and assistance of agricultural societies, and of that kind of knowledge and experience which he can acquire better from them than from any other source that will be open to him. Farmers should, therefore take more interest in agricultural societies, as, *when properly managed*, they can promote his interests to a very great and profitable extent.

PREVENTION BETTER THAN CURE.

One of the best systems of medical practice ever known, and which will probably stand at the head of the list for all coming time, is NURSING. Good care will do more than all the medicine in the world without it. Medicine is sometimes very good, but the most skilful physicians have found they could do but little with serious cases without that intelligent and careful watching at all times required for the removal or prevention of irritating causes, and known as good nursing.

The writer once owned a horse suffering from an excessive cough. Numerous remedies were prescribed by kind neighbors, enough, doubtless to have killed him at once. It was concluded to discard all, to give the best attention to his wants, and avoid everything which causes or prolongs a cold. This was during the changeable weather of autumn—and he was blanketed whenever a chilly air was apprehended; he was worked very moderately, always avoiding prespiration, and he was fed on succulent food which was supposed to favor expectoration, and especially young clover. In a few weeks nature had performed a perfect cure; and if any one of the nostrums had accidentally been employed, and had not proved very prejudicial, it would unquestionably have received high praise for its efficacy. It is of the most importance to discriminate between a recovery *by virtue* of a medicine, and *in spite of it.*

To *keep animals in health*, is more important than to cure sick ones, and for this purpose a few leading rules should be always observed, and which cannot be out of place here.

1.—Always feed regularly, as to time and quantity. Many animals are made sick by starving at one time, and stuffing at another. Especially, never *overfeed.*

2.—The same rule must be observed with watering—and let the water be *pure.*

3.—Never *overwork* an animal—regular and moderate exercise will enable a working animal to do more the year through, by all odds, than any hurried driving at one time and resting and overfeeding at another; and be infinitely less liable to disease.

4.—Allow a regular supply of salt—it is useful, but an observance of the preceding rules without salt, will be incomparably better than their infraction with it.

5.—Never feed musty or bad food. If musty fodder must be used, pass it through a rapid cutter, and moisten, salt and meal it.

6.—Avoid unwholesome or poisonous plants in pastures and in hay.

7.—Guard all animals against cold rain and snow falling on them, and against lying on cold wet ground.

8.—All changes of food must be *gradual.* If from hay to grass, let the grazing be but an hour the first day, two hours the next, three the next, &c. The same caution must be carefully observed in beginning to feed with roots, grain, &c.

9.—Be careful that animals always have enough of exercise—and plenty of pure, fresh air. Stables must be well ventilated—animals often become sick from breathing foul air.

10.—Lastly, and by no means least, let strict cleanliness be observed. All animals, even pigs, kept clean and curried, are found to maintain their flesh better, or fatten faster, than when dirty and neglected—and cleanliness is more important to health than for flesh.

PRESENCE OF MIND.

There is no branch of practical education of greater importance than teaching *presence of mind.* Disasters which occur are greatly increased by the fright and perturbation which are generally manifested on such occasions. Self-possession and practical knowledge combined, often give an immense superiority to the person who can command them. The world-felt loss of the steamship Arctic could have been prevented, if a single individual on board had possessed the two qualities:—by immediately driving the water from one boiler, and filling the other, the rent in the ship's side would have risen above the water's edge, and the hundreds who perished been saved.

Fright and confusion often result directly from conscious ignorance, and a feeling of inability to help one's self. Hence it is of the utmost importance to fix clearly and indelibly in the mind at all times what course should be pursued when accidents occur. The remedy may be instantly applied. A volume should be written to teach this knowledge, which should be taught in schools and colleges, as equally important with arithmetic, chemistry, and book-keeping. As an illustration of our meaning, and also as a small contribution to this object, we furnish a few rules to be observed in certain cases of emergency or of accident.

If a house take fire, instantly endeavor *to keep all the doors shut.* Currents of air and of flame cannot pass through, and it will burn much more slowly, and furniture may be saved, and perhaps the conflagration so retarded until it may be extinguished. We have known houses in a mass of flames in a few minutes, merely in consequence of doors left wide open in the fright and terror of the occasion.

If the lower story is in flames, and inmates are above, the first thing is to direct the attention to loosening a bed cord or tying bed clothes together, which, fastened to the bedstead, will admit a safe descent. A prompt attention to this particular would often save broken limbs, from leaping.

If horses become frightened and run, in all cases *keep your seats,* unless they stop so that you may jump out safely. A passenger striking the ground or any obstacle, alone and unprotected, is far more likely to be injured, than when encased in the protecting walls of a carriage. Always avoid the extreme folly of seizing the reins from the driver.

If harness breaks while ascending a hill in a waggon instantly turn the horses' heads from the bank or precipice if there be any. This will cause the wheels, in backing, to turn to the same side, and prevent falling or running off. The same precaution is to be observed, if a balky horse should commence backing.

Horses which run away and cannot be stopped, may be checked (and sometimes cured) if a long ascent is at hand, by turning them up the hill. They soon get tired of this sort of hard work, and if then urged still upward, will be reluctant to run away again

To save horses from a rapidly burning barn, they must be instantly blindfolded. They cannot otherwise be led out.

In assisting persons who have broke through ice,—procure, if possible, a pole or stick, —laid horizontally on the ice, it will sustain a considerable weight, even if the ice is thin and also assist in laying hold for extrication. Many persons lose their lives in water, by slipping off the ice edge while attempting to raise themselves on their arms. It is better to approach the edge *sidewise,* and attempt to *roll out.*

In case of a severe wound, and danger of bleeding to death, before medical assistance arrives, immediately tie a knot in a pocket handkerchief—(or if one is not to be had, use a suspender)—then tie the handkerchief loosely around the part cut, *between* the cut and the *body* placing the *knot* about a couple of inches from the wound; put in a short stick through the bandage and *twist* until the blood stops running. Bleeding to death may almost always be prevented in this way.

On resuscitating persons who have been drowned—place them upon a table or bed with the head a little elevated; procure a pair of bellows if possible—place the nose in the mouth of the patient, close the rest of the mouth with a cloth, and forcibly fill all the lungs. Then remove the bellows, press upon the lungs, and drive out the air. Repeat the operation as rapidly and thoroughly at possible for several hours—meanwhile keep the body and extremities warm by hot flannels and rubbing. If no bellows can be had, let the strongest person present inflate his lungs to their full capacity, immediately place his mouth on that of the patient, force the air into his lungs—imitate natural breathing as far as possible. The reason why a person dies from drowning is that the supply of air is cut off from entering the lungs—*no water* by any possibility ever enters them, so by

giving the lungs a copious supply of fresh air and inducing circulation by friction and warmth, we are doing all that can be done to restore the patient.

In cases of poisoning, if discovered immediately, take a thorough emetic at once. Many things will answer if no better can be found—a dessert spoonful of mustard in a gill or less of warm water, or three or four grains of tobacco, (a small quid) will operate as a ready emetic.

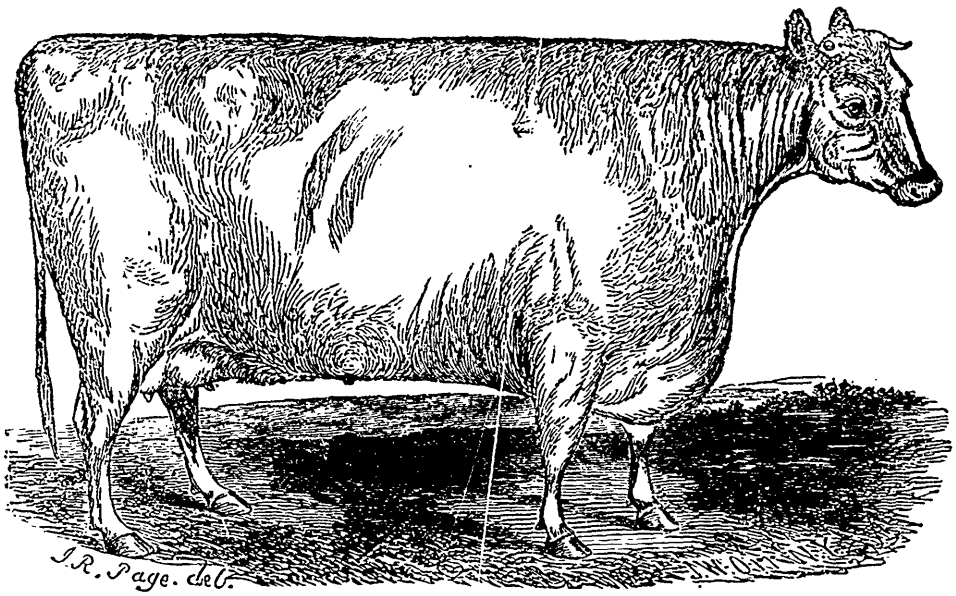
KNOWLEDGE OF ENTOMOLOGY.

How much the farmer, and the gardener, need this knowledge—we mean the knowledge of the nature, habits, and haunts of the insects that infest their crops and fruits. These are some of the reasons why they need this knowledge. Such knowledge will enable him to *prevent* their ravages, by destroying the eggs. It will enable him to *remedy* their ravages by destroying them where they exist. It will enable him to economize time and strength, by doing the needful work exactly at the right time. It will enable him to decide whether he should make any effort at all; for in certain cases the evil is incurable. It will give him patience and courage; for he will, in many cases, learn that the pests are only temporary, and that a few years will witness their departure. It will suggest to him what *new* remedies may be tried, based on the habits in which it will instruct him. It will show him how great results may flow from a single act—how a whole district may be visited with an insect pest, or escape that visitation by a single negligence, or a single precaution. It will enable him to aid others who need the information he has gathered, but whose opportunities have not permitted them to gain it for themselves.—*Ohio Farmer*

Evidences of Good Farming.—The requisites and evidence of good farming have thus been enumerated by good authority:—"A good soil, well tilled, and kept free from various weeds; lots well fenced, and suited in number to the size of the farm; substantial and convenient barns and stable of sufficient dimensions to contain the produce of the farm, and to comfortably house the cattle kept on it; a judiciously arranged dwelling, in a neat condition, with a filtering cistern; convenient buildings to facilitate the economical management of the farm—such as a wood house, a waggon and tool house, a workshop, granary and corn house, a convenient piggery, an ice-house, ash and smoke house—all secured from decay by being well raised from the ground and neatly painted and whitewashed; convenient yards attached to the barns and stables, so arranged as to prevent waste of the liquid manure, well sheltered from the blast of winter, and provided with water for the cattle; door-yards laid with grass and flower-beds, and shaded by ornamental trees, indicating the dwelling of taste, health and comfort; a kitchen garden highly cultivated, and containing the various species of vegetables raised in our climate, with strawberry and asparagus beds; a fruit garden or orchard, where choice apples, cherries, plums, raspberries, gooseberries, blackberries, currants, &c., are found."

The hog malady in Ohio is becoming somewhat alarming. It is computed that within a radius of 100 miles around Cincinnati, no less than 60,000 or 70,000 hogs have fallen a prey to the distemper. Hitherto all attempts at a remedy have failed; and, being epidemic in its character, it is as yet known only as a kind of cholera.

Perpetual Light.—A most curious and interesting discovery has just been made at Laugres, in France, which we have no doubt will cause a searching scientific inquiry as to the material and properties of the perpetual burning lamps, said to have been in use by the ancients.—Workmen were recently excavating for a foundation for a new building in a debris, evidently the remains of Gallo-Roman erection, when they came to the roof of an under ground sort of cave, which time had rendered almost of metallic hardness. An opening was, however, affected, when one of the workmen instantly exclaimed that there was light at the bottom of the cavern. The parties present entered, when they found a bronzed sepulchral lamp of remarkable workmanship suspended from the roof by chains of the same metal. It was entirely filled with a combustible substance, which did not appear to have diminished, although the probability is the combustion has been going on for ages. This discovery will, we trust, throw some light on a question which has caused so many disputes among learned antiquaries, although it is stated that one was discovered at Viterbo, in 1850, from which, however, no fresh information was afforded on the subject.



SHORT-HORN COW "DUCHESS."

Winner of the First Prize at the New York State Show, at Elmira, 1855.

The above cut represents a very fine animal, belonging to the herd of S. P. Chapman, Esq., of Mount Pleasant Farm, Madison County, in the State of New York. More than once we have had occasion to refer to Mr. Chapman's stock, as evincing correct judgment in the selection and breeding—several of his animals having, within the last two or three years, been purchased by Canadians, and having proved highly satisfactory. We learn from our excellent contemporary, *The Country Gentleman*, that Mr. Chapman has some score of young bulls and heifers for sale; and among them the well-known bull HALTON, formerly owned by the Hon. Adam Fergusson. Subjoined are the pedigrees of *Duchess*, and her sire, the *Duke of Wellington;* from which it appears that Mr. Chapman's herd contains the best and purest blood to be found among the different families of short-horns in the mother country. The name of the late lamented Bates, of Kirklevington, is of itself a guarantee.

DUCHESS, white, calved June 25th, 1849; bred by and the property of S. P. Chapman, Mount Pleasant Farm, Clockville, Madison County, N. Y. Got by Duke of Wellington (3554); dam (Matilda) by White Jacket (5547); gr. d. (Hart) bred by and imported into America by the late Thomas Hollis, formerly of Blythe, England.—See *American Herd Book*, vol. i. page 201.

DUKE OF WELLINGTON, roan, bred by Thomas Bates, Kirklevington, Yorkshire, England; imported by George Vail, Troy, N.Y. Got by Short Tail (2621); dam (Oxford) by Duke of Cleveland (1937); g d. (Matchem Cow) by Matchem (2281); gr. g. d. by Young Wynyard (2859.)

HORSE POWER.—The power of a horse is understood to be that which will elevate a weight of 33,000 pounds the height of one foot in a minute of time, equal to about 90 pounds at the rate of four miles an hour.

ABSURDITIES OF THE PRESENT CLASSIFICATION OF HORSES AT AGRICULTURAL EXHIBITIONS.

To the Editor of the Agriculturist.

SIR,—You may remember a conversation I had with you, at the late Fair at Kingston, as to the absurdity of the present system of classifying horses entered for premiums, under two heads only, viz., "Blood Horses" and "Agricultural Horses." You concurred with me as to the obvious defect of such a system, and promised to call attention to the subject in your excellent journal. I suppose you have deemed it better to defer the matter until the season approaches for making up the premium lists for the Fall Exhibitions; but as the same objection may be urged against the premium lists at our Spring Fairs, I enclose an extract from an American paper on this point, which meets my views exactly. Perhaps you will think it worth a place in the *Agriculturist*.

Yours sincerely,

Nelson, December 6th, 1856. J. H. W.

"There appears to be, according to the prevailing system, but two classes of *breeding horses*, in one or the other of which all animals must be entered, viz., "Thorough-breds" *i.e.* horses with a pedigree traceable to the English Stud Book, and "Horses of all work." Consequently, any person entering a horse other than a thorough-bred, must place him under the head of "All work."

"Now this "all work" covers a great deal too much ground, as it is *impossible* to find in *perfection* all the requisite qualifications for the various uses of the horse, combined in any one animal. In short, we cannot expect to find the *perfection* of the draught-horse and the race-horse in the same individual. Neither would a person of any experience in breeding, expect a stallion or mare of *superior excellence* for producing horses for heavy draught, to excel in speed; and *vice versa*. The attainment of the one quality, necessarily involves the sacrifice, to some extent, of the other. Yet these animals are obliged to contend together.

"The class should be divided as follows:—1st. *Roadster, Stallions and Mares.* Under this head, those horses should be entered in whom the qualities of speed and endurance are pre-eminent, and to whom we should look for producing those animals most in demand for the road, light carriage, saddle, and pleasure riding.

"2nd. *Stallions and Mares for Agricultural purposes.* The qualities to be sought for in the animals entered in this class, should be such as would be desired by the farmer for the plough, the market-waggon, &c. In short, horses of medium speed, size, and strength. Animals of this description would be suitable for the omnibus, horse railroad, express waggon, and similar purposes.

"Lastly. *Stallions and Mares for heavy draught.* These animals should be judged of as to their capability for producing horses fit for the drays and heavy waggons, and teams about the cities.

"These classes would comprise all that would be necessary, and at the same time render the duties of the committees more simple, and more satisfactory to competitors.

"I hope that before another season, the attention of those having the matter in charge may be drawn to the subject, and that premiums will be offered in a manner better calculated to improve our breed of horses."

REMARKS.—We commend the above to the consideration of those who are charged with the duty of framing premium lists for Agricultural Shows, and especially for the Provincial Show. There can be no doubt the classification of all the horses that may offer for competition, under two general heads, is improper. Each horse entered should be allowed to compete with those of its own class, *and none others*. The class should be determined from a consideration of the purposes, or

uses, for which the particular description of horse is adapted. "Blood horses" appear to be a small class in this country. At the last Provincial Exhibition there were but eight entries of blood horses, against 226 "Agricultural!" In our opinion, their usefulness, as compared with the other classes, may be set down at about the same proportion. But, for breeding purposes, it may be desirable to encourage the importation of thorough-bred stallions. The class should not, therefore, be dropped, especially at our Provincial Shows.

The absurdity of entering all other horses, of whatever size or conformation, under the head of "Agricultural Horses," must be obvious to any one who has ever attended an exhibition. An attempt is made to distinguish between "Heavy Draught" and "Agricultural purposes," but this is only a sub-division, and the Judges must themselves select those entitled to the prizes from the whole number entered. Much labour, and sometimes disagreeable duties, are thus imposed upon the Judges. We observe that prizes are given at the New York State Exhibitions for "Horses of all work,"—stallions and mares in separate divisions; "Draught," "Thorough-bred,"—different ages, from four years and upwards to one year; "Matched horses,"—three divisions, 16 hands and upwards, 15 to 16 hands, and 14 to 15 hands; "Matched trotting horses," "Geldings," "Single mares," and "Single trotting horses."

The Provincial Prize List is much less specific as to classes, and has no place for *trotting* horses. If the offer for prizes in this class would be likely to convert our "horse-ring" into a race-course, as it has done in several of the States, we should hope to see its exclusion continued. But a class of "roadsters" might be very properly added to our lists, in which good action as a trotter would be a high recommendation.

We hope the list of premiums for our next Show, which comes off at Brantford, will include the class mentioned as distinct from all others; and that instead of sub-divisions, the "Heavy Draught" and the "Agricultural" may be distinct classes also, and that competitors will be compelled to choose the class in which they will exhibit.

Horses and Carrots.—A correspondent of an *American Journal*, gives his experience in feeding carrots to horses as follows:—"For two months past I have fed my two horses upon carrots and hay. My horses are in constant service on the road; and under this treatment they usually come out at the end of the "pile" looking better than when they commenced. My dose is two quarts morning and noon, at night four, to each horse; they have as much good, sweet hay as they will eat, and cut, whether fed to them dry or otherwise. This latter I have always practiced ever since I have had the management of horses; and I am satisfied that it is the cheapest and best way in which it can be given to the horse. There is no waste, and horses eat it better, and have more time to rest, which is quite an important consideration, where the horse is liable to be taken from the stable at any moment. I am satisfied there is no better way of feeding horses, nor is there any cheaper one—that I have ever tried—than the one mentioned. If there is, will not some one who knows, please report? I always cut them quite fine before using.—Carrots are most excellent for horses whose wind is any way affected—such as the heaves, &c. Those who have tried them for this purpose will, I think, agree with me in this; if not, just try the experiment and be satisfied. They are unusually cheap, compared with other articles of food of equal nutritiousness. Last year I paid nine dollars per ton, this year eleven, and at the latter price I prefer them to oats—measure for measure.

THE DIOSCOREA BATATAS,

AS CULTIVATED BY MURPHY & LYONS, OF SIMCOE, C. W.

Now, that the "summer is past and the harvest is ended," it is pleasant and profitable to compare notes, and report progress. To nothing will this remark apply more appropriately than to the new *Chinese* potato of which we have heard from so many sources, and about which so many conflicting statements have been made.

Being the first to introduce this new esculent into this Province, and having cultivated it somewhat extensively, and feeling interested in its success, we propose to give the history of our experience in its growth during the past season,—hoping soon to hear from others who have also given attention to it. The Dioscorea Batatas, your readers will remember, is a native of the eastern portion of Asia, and belongs to the order of Dioscoreaceæ, represented in this country by the Dioscorea Sillosa, or "wild yam root." The D— Sativa and other species produce yams, which are very important in tropical climates, but it is somewhat remarkable that several of the genera of the order above mentioned possess very acrid properties, which in some species render them poisonous. Thus the large fleshy tubers of the Tamus Communis have been employed as stimulating plasters, while the Dioscorea Triphylla and Dæmona, when boiled, exhibit dreadfully nauseous properties. The history of the new species, the subject of the present article, dates no further back, in our annals, than 1850. In this year, the French Consul at Shanghai sent tubers of the plant to France for the purpose of testing its value in that country. Not, however, till three years after was special attention called to it, and experiments commenced to prove its hardiness and productiveness. From this time it seems steadily to have advanced in public favor in France and England, and lately the United States and Canada have been added to the list of those countries in which its cultivation has been attempted.

The plant is trailing in its habits, with annual stems and perennial roots. Several of these stems frequently arise from the same root, and, if left undisturbed, entwine themselves firmly around each other. The leaves are deep green, glossy, and borne upon petioles or foot-stalks of a violet color and channeled. They are of nearly equal length and breadth, being cordate, or heart-shaped, and veined.

The root is peculiar in growing perpendicularly into the ground, with its largest end below, in being thickly studded with rootlets, and in the pearly whiteness of its interior, which possesses very little flavor, and is free from fibrous tissue. In size it varies from 15 to 22 inches in length, its lower end attaining a maximum diameter of two inches, and gradually lessening towards the other end. Writers speak of its extending into the soil to the depth of three feet, but this we suppose occurs only in exceptionable cases, and in permeable land. The plant is said to be most extensively cultivated in every part of China, and to constitute, in some instances, the principal food of the inhabitants.

The advantages claimed for the Dioscorea by its friends are:—It is more valuable as food, is more productive, and less liable to disease than the common potato. The root may be kept either in or out of the ground for a long period uninjured, and may even be ground into flour. The plant is hardy, and may profitably be left growing for two or more years. It possesses little foliage, and may be cultivated in close rows. The objections to the culture of this new esculent are obvious. The ground must be very deeply cultivated, and the harvesting may sometimes prove troublesome. To these some persons would add a third, having reference to its being unable to flourish in such a climate as ours. Our experience, however, leads us to regard the yam as hardy,—equalling in this respect many of the field crops of this country. The same frost that cut down corn and

potatoes to the very ground, was the first to affect it in the least. Up to this time it showed no signs of being affected by cold sufficient to kill melon vines; and when the tubers were taken up, upon the 7th of November, they seemed, from the appearance of the rootlets, to be in a state of vigorous growth. Add to this, also, that a few were left in the ground during the intense cold of last winter, in the nursery of Wm. R. Prince, of Flushing, and were taken up uninjured in the spring, and we can hardly deny to the plant the credit of hardiness.

Referring to the first of the above objections, we naturally speak of the soil most suitable for this new yam. Experience this year has shown, without doubt, we think, that a warm, dry, sandy loam is by far the most profitable for its cultivation. Even poor soils seem to be able to compete quite successfully with the richer. Our tubers were planted last year in three separate localities, and in four different varieties of soil. The first was a poor beachy sand; the second, a sandy loam, light, warm, and dry; the third, also, a sandy loam, but rich and damp; the fourth, a still heavier loam, with clay sub-soil, newly cleared, and somewhat shaded by a forest of hickory. The sandy loams were trenched to the depth of 2½ to 3 feet, with the exception of the last, which, as an experiment, was cultivated to the depth of 15 inches only. Upon the 16th of April, the tubers were placed in small, well-drained pots, and these plunged into the earth of the hot-bed. Upon the 9th June, they were planted out in the open ground, and afterwards received ordinary attention in hoeing and watering. A few (foreign tubers) were started with difficulty, and were not transplanted till later. We began to harvest those growing upon the second variety of soil above mentioned, and were certainly gratified upon finding their size fully equalling what we expected. Extending our observations, however, to the richer and damper land in the vicinity, we found the roots not so large, when we expected to see them larger. So also in the poor soil, No. 1, the product was quite as great as in the last instance, and this with less care and labor. Upon the new sandy loam, the roots were very small.

Our readers will notice, from the above report, that in the very soil most adapted, in a dry, warm summer like the past, to most root crops the Dioscorea did not succeed so well as in the adjacent warm and dry spot; and that in the shaded and shallow cultivated land it succeeded worst of all. In a letter from Wm. R. Prince, of Flushing, who is by far the most extensive cultivator of the yam upon the continent, he says that the only kind of soil unsuited to the root is a "rich and moist one;" and it will be seen that this is in accordance with the facts above mentioned. There is, therefore, a two-fold reason why we should prefer sandy land for the culture of this root;—this character of soil is warm, and more suited to the habits of the plant, and, being permeable, is more easily worked to the requisite depth. It seems strange, and we can hardly believe it, that a plant bearing so little foliage as the *Chinese* potato should succeed in poor soils; and yet we know the cranberry, with the same characteristic, flourishes and bears large crops of fruit on the salt marshes near Cape Cod. Can it be, that the subsoil furnishes food for vegetables of this class, which energetically push their roots far into the soil beyond the reach of other plants?

In the U. S. Patent Office Report, vol. iii., for 1854, is a very interesting article upon this new yam, from the pen of D. J. Browne, Esq., and upon page 172 is the following paragraph:—"It is even thought that its cultivation in large pots, buried under ground, might be successfully adopted in some cases, particularly where the soil is of a permeable nature, which will allow it to extend its roots to a depth of more than a yard." This, we believe, will never be realized. Potting we found to be a decided injury to the plant, and will be tried next year only as an experiment. It seems to grow well in the open

ground only, unconfined, and free to throw out its rootlets in every direction. Had we transplanted our tubers some time earlier, regardless of the weather of a most unusually backward season, we would have secured, we think, a much more satisfactory result. Time, that cools the enthusiasm of the over sanguine, and softens the asperity of a too rigorous judgment, will undoubtedly add much to our knowledge of this new esculent. So far, the most reliable accounts are in its favor, and the forthcoming Patent Office Report thus gives us the summing up of Mr. Browne:—"Considering its property of persisting in the ground for several years without deterioration, being in readiness for the kitchen at all times, and all seasons, after the first year's growth, it cannot fail to prove an excellent substitute for the sweet and common potato in all localities where it will thrive."

Raising Lopped Horns.—A short time ago a correspondent inquired if there was any known method of raising lopped horns. We accidentally came upon the following communication in the *Albany Cultivator* for 1852. The writer says: "The horns of steers can be raised without the least damage to their growth, (the most convenient time to do it is when they are kept in the stable) by taking two small pulleys; place one of them directly over the front edgde of the manger, high enough to be out of the way of the horns —the other at any place you wish, so that the weight will hang out of the way; pass a cord through them with a loop at one end, to slip over a button on the end of the horn; at the other end attach a weight of from two to four pounds. This should be put on every night when the steers are in the stable, and taken off in the morning when turned out. I have never known this operation, when faithfully performed, to fail of raising one or both of the horns to any desired position, in from two to six weeks time. Our success has been such that we consider the lopping of one or both of the horns no serious objection, provided they are otherwise in good shape."

AE GUDE TURN DESERVES ANITHER.

BY JAMES BALLANTINE.

Ye maunna be proud, although ye be great
The puirest bodie is still your brither:
The king may come in the cadger's gate;
Ae gude turn deserves anither.

The hale o' us rise frae the same cauld clay,
Ae hour we bloom, ae hour we wither;
Let ilk ither to climb the brae;
Ae gude turn deserves anither.

The highest among us are unco wee,
Frae Heaven we get a' gifts the gither;
Hoard na, man, what ye get sae free;
Ae gude turn deserves anither.

Life is a weary journey along,
Blythe's the road when we wend wi'ither;
Mutual gi'ing is mutual gain;
Ae gude turn deserves anither.

Chinese Sugar Cane.—A correspondent of the Southern Farmer gives his opinion of this plant as follows:

Last spring a friend gave me a few grains of the end of this cane—enough to plant some twenty or twenty-five hills, which he had received from the Patent office. I placed no value upon it, but planted it simply because it was new, and I was anxious to see its growth. It was planted in a poor border in my garden, and its cultivation was at first almost entirely neglected. It however came up well, grew off vigorously, and suckered freely. I thought upon observing its growth, that it might be made valuable as an article for soiling cattle, and therefore late in the season gave it one good working, and kept it free from grass. I saved about three quarts of seed, and about this time I met with some articles stating its abundant supply of saccharine matter. I concluded to give my hogs a taste of it, and was surprised to find the avidity with which they chewed up every portion of the stalk, leaving other green food, such as sweet potato vines and late green corn, too late to mature for roasting ears, and therefore in its prime for this purpose, and selecting these bare stalks in preference.

So satisfied am I of its value for this purpose, that I intend planting the seed I have saved on good land next year, and giving it the usual culture of Indian corn, if for no other purpose to feed my hogs; and I believe it will pay well—for the stalk is so solid that I do not doubt it may be kept for many weeks without becoming too dry for this use.

Apple Pomace.—We are often asked whether this is of any worth for the land, and if so, how it can be used. The value cannot be great, especially since the new way of making cider without straw. But if composted with lime, it would in no very great length of time crumble down into a black mould, in which state it might be worth something—a little more, perhaps, than the cost of the lime; and what would otherwise be a lasting nuisance would be got rid of. It would be well first to let the pigs root among it, and eat the seeds and other parts, as they would. If composted with lime, it should hardly be permitted to lie where the family would breath the fumes arising from it.—*Plough, Loom and Anvil.*

EDITOR'S TABLE.

Agricultural Societies.—We send a few specimen copies of this number to the officers of all County and Township Societies, whose names we have been able to obtain, in the hope that they will submit them for inspection at the annual meeting, and urge the necessity of supplying each member with a copy. By employing an active person to canvass the Township for subscribers to the Society, *and offering the paper as a bonus*, they will in most cases obtain more money, and will certainly excite more interest in the doings of the Society than by any other plan. Try it, and see!

Our Prizes.—The prizes announced for competition are open to *all Canada*. We have no special agents this year. Look at the terms, and set to work! We want at least 10,000 new subscribers; and have resolved that no person *who will work* for the attainment of this object, shall lose by his efforts.

Improved Farming and Stock in Canada.—We have received from W. H. Sotham, Esq., the celebrated importer and breeder of Hereford Cattle, in the United States, an interesting account of his visit to Canada, lately, and especially of his examination of the herd of short-horns, imported and bred by the Messrs. Miller, of Markham and Pickering. He says he never "put his hand" upon a better selection of first-class animals. Mr. S. gives the "novice breeders" and the "agricultural press" some hard knocks for puffing third-rate animals; but we shall not regard his blows as aimed at us specially, and shall, therefore, publish his remarks in the February number. It came too late for insertion in this.

Toronto Agricultural and Horticultural Club.—The first winter meeting of this Club was held in the Court-House, on the 22nd December. Mr. Charnock read a paper on "Fire-side Farming." It was entirely too lengthy for insertion in our columns. The number of members present was not large. The next meeting will be held on the 8th inst., at the same place. Professor Buckland will open the discussion.

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