young and ambitious philosophers, fearing the loss of their popularity, did not dare to ask the professor to give the results of his investigations. The most disgraceful and iniquitous part of the proceedings was that a committee was appointed for the purpose of lobbying the government for more money to aid in propagating the wild theories of these young philosophers.

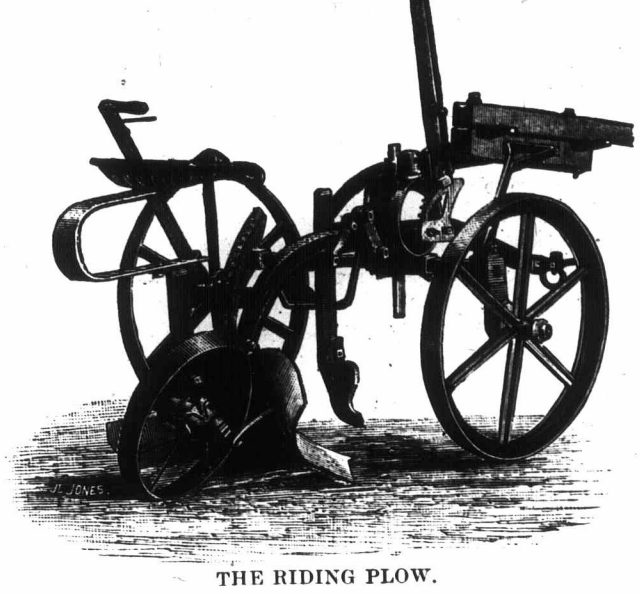
It is the sad misfortune of all youthful and aspiring philosophers that, not suspecting the weight of criticism which they are sure to receive, they rush into all sorts of theories without taking the precaution of subjecting them to rigid scrutiny. Our advice to venturesome boys who swim without bladders is: Boys, don't go beyond your depth.

Variation in the Yield of Milk.

A cor. of the N. Y. Tribune gives the following bit of his experience: When I milk in seven minutes a cow giving nine quarts at one milking, she never varies. When I change cows, lest in my occasional absence the cow might resent the presence of a stranger, and the man takes fifteen minutes to milk her, the cow gives a quart or two less. The same happened when because of a badly bruised thumb I milked the cow more slowly than usual. A cow with short teats is milked by using the bent thumb and the first two fingers, and is thus milked as quickly as another cow with the whole hand. When another milker strips the cow with the thumb and forefinger the milk always falls off. If, as is most probable, a good deal of the milk is secreted during the milking, the quicker milking should get the most milk, and the quantity should keep regularly up to the standard yield so long as the same quick method is practiced.

The Riding Plow.

When attending the exhibitions last year, we walked through the implement departments to ascertain if any new or improved implements of importance were to be seen. The plow here illustrated drew our special attention as destined on our best farms to take a place among the improved labor-saving implements. There are in this plow many improvements made on the old sulky plows, and new patents have been secured on the improvements. Some of the principal features are the even balancing of the weight of the plow, the turning of the furrow, and driver on the three wheels; the guarding of the rear wheel from obstructions by a flexible steel landside; a flange or guide furrow wheel, and the connecting of the plow by means of a king bolt to axle, placing the plow more under the control of the plowman, enabling him to turn more easily, cut a straighter furrow, and to finish the furrow more effectually. The operator also sits where he can see his work, not in front of it. It is claimed that with this plow the work can be done quite as well in every respect as by the most skilled plowman when walking, and with quite as much ease to the horses. More particularly is this the case in breaking and plowing hard, dry land; here the whole strength of the team is utilized to the best advantage, as the even depth of cut and steadiness of the plow can be so guaged as to keep it at just the depth required without any exertion of the plowman, and so much more plowing can be done that in point of economy alone this plow will, as soon as its capabilities are known, be, as the harvesters now are, on every good, well managed grain farm. This plow is a Canadian invention, and is, we believe, superior to anything of the kind made either in England or the United States. The inventors were convinced, after introducing the American designs of sulky plows, that something more was required to make riding plows a success for our Canadian farming, and as a result from their practical experience have produced this valuable machine plow, combining in one implement all these valuable improvements, have produced a riding plow that has made its mark during its first appearance in 1886, and is destined to be regarded as one of the greatest labor savers in farm machinery of the nineteenth century. The Cockshutt Plow Co., of Brantford, Ont., are the patentees and manufacturers. They have published a pamphlet giving full particulars and testimonials regarding it, which they mail free to applicants. This is a good firm. It is always best to communicate with the manufacturers direct in making purchases.



THE RIDING PLOW.

Salt as a Fertilizer.

In our last issue we discussed the effects of land plaster as a fertilizer, which reminds us of the desirability of inquiring into those other applications which act somewhat similarly, namely, salt and lime. We pointed out that the action of gypsum was mainly indirect; salt has almost entirely an indirect action.

Few substances have been more perplexing to the experimenter than salt, both for land and for stock, and there is yet much to be learned concerning its uses for these purposes. Applied to land, it has produced variable results under apparently the same conditions. Its action, therefore, being uncertain, farmers should be ready to grasp everything that has been proved concerning its advantages and disadvantages. We pointed out that plaster sometimes acted directly and sometimes indirectly, or both; not so, however, with regard to salt, for mostly all agricultural plants can grow and attain perfection without the elements of which it is composed, which cannot be asserted of the constituents entering into the composition of plaster, viz., sulphuric acid and lime. However, as salt is found in every fertile soil, it is taken up by the plant, and although, as a rule, it is not necessary for plant growth, it is required in the composition of agricultural plants for the animals which feed on them. So far as the animal kingdom is concerned common salt is as necessary in the composition of the plant as those other salts without which cannot grow.

Common salt is a chloride of sodium; that is, a chemical union of chlorine and sodium—a gas and a metal. By a series of laboriously conducted experiments, its chief action in the soil has been placed beyond doubt, being almost identical with that of plaster. When a sodium salt, in an ordinary soil, which contains absorbed bases, comes into contact with lime, magnesia, potash, and ammonia, it sets these substances free, while a corresponding portion of the sodium in an insoluble form becomes fixed, which produces an increase of easily available plant food, and prevents too great a localization of the same in the surface soil. This action may be demonstrated by an experiment made by Eichorn, who caused pure water to percolate through the soil, and compared the results with a one-tenth per-cent salt solution percolated through a soil similar in quantity and composition, the depth being one foot. The following table gives the result, reckoned in pounds of constituents named:

	Pure Water.	Salt Solution.
Sulphuric acid	117	130
Phosphoric acid	36	27
Potash	134	171
Lime	149	315
Magnesia	45	82
Ammonia	10	12

This table shows that salt produces the greatest effect in dissolving lime and potash, causing them to descend into the soil. The experiment seems to show that salt has no effect on the phosphoric acid in the soil, but other experiments have proved that it also has a solvent effect on the phosphates. The advantageous effect of this action is to distribute the nutriment to greater depths, where it usually becomes absorbed more efficiently by the plant roots. During this substitution process, however, injurious chlorine combinations are formed, notably chloride of calcium and chloride of magnesium.

Specially worthy of note are also the effects of salt on the composition of plants. It has been observed that applications of salt reduce the percentages of starch, sugar, and other carbo-hydrates, and have been known to produce an incombustible quality of tobacco. Salt has been useful for hemp and flax; indeed, flax has flourished on soils so salty that they have killed the tobacco plant. It has proved beneficial for pastures, especially when the land is moist. It sweetens the grass, making it more palatable for stock, and thus acts an important part in stock-feeding. The causes given for the beneficial effects of salt upon pastures are that grasses are not easily injured by the chlorides of calcium and magnesium which are formed in the soil. Salt has been found to benefit clover for the same reasons mentioned with reference to the action of plaster. Roots have also been benefited by applications of salt. It is also noteworthy that nitrogenous fertilizers, such as nitrate of soda and ammonium salts, have produced better results when applied with salt than when applied alone.

Salt should only be used on light, rich soils, and should, as a rule, not be applied in greater quantities than 450 lbs. per acre.

Countries which know the most about the action of salt use the least of it. England uses