

running measure. A fence of 3 cables in height would cost for wire cable alone 74c. per rod, and the staples and screw-eye bolts for fastening to posts and straining the wire would increase the cost about 1 to 2c. per rod. If only 2 cables high the wire cable alone would cost 49c. per rod. This cable wire is heavier and of better quality than is necessary perhaps for herding purposes and is used largely for permanent fencing, and when properly erected lasts for a life time. We could furnish a lighter article unquestionably, made of only 3 wires properly twisted, that could be sold for perhaps one-third less money, in large quantities.—*Rural New Yorker.*

Wheat Bran Nutritious.

Chemists have long believed that wheat bran contains much material for making animal blood and flesh. The analysis of wheat bran and flour, by Dr. Hubbell, a noted pharmacist of Philadelphia, presents these facts. One hundred pounds of wheat yield 76 pounds of flour and 20 pounds of bran. The flour holds in it of tissue-making elements—gluten, albumen, etc.—1.65, of phosphates and other salts, 0.70—total 2.35 per cent. The bran contains of tissue-making elements, 3.10; salts, phosphates, etc., 7.05—total 10.15 per cent. The bran is, therefore, four-fold more nutritious than flour, or being but one-fourth as heavy as flour, it has in fact as much real value, as a food, as flour itself. Wheat flour from the mill consists mainly of starch, the blood-flesh-and-bone forming materials or elements of the grain are rejected in the bran because of the ignorant opinions of other generations. According to this high authority wheat bran constitutes a decidedly important article of food, whether for man or beast.

It is a well established fact that bran is more easily digested than flour, but this does not prove that it is a healthier bread. Such facts as these are apt to be too lightly regarded, but they are entitled to the confidence of the people, because chemistry has now advanced so far that the primary life-sustaining elements of all food are as well known as any kind of facts. Farmers should note these facts and make experiments in the manner of preparing bran as a food for stock. The fact that most animals are fond of wheat bran is pretty good evidence of its value. The instincts which nature plants in animals are almost unerring.—*Live Stock Record.*

New Weeding Machine.

The *North British Agriculturist* describes a new weeding machine, lately introduced into Britain from Denmark. It says: The implement is an easy draught for one horse, and is very simple in construction, taking in about 4 feet 6 inches at the time. The body of the machine consists of a revolving sort of drum, into which are fastened three rows of long sharp steel teeth, or combs, as they have been called. The implement moves smoothly on a wheel at each end of this drum, and the horse, yoked in a pair of shafts, speeds along easily right in front of the draught.

The main purpose of the machine is the removal of weeds, such as wild mustard or charlock growing among corn, and it is claimed for it that when the ground is soft it will eradicate the weeds, and in other cases cut the heads off—in either case destroying the weeds.

The three rows of teeth or combs, of course, revolve with the drum, and the teeth are so arranged that they pass scathelessly through the corn plants or blades, but are close enough to secure the weeds. The plan adopted for the cleaning of the teeth is very ingenious, and apparently works satisfactorily. A sort of cam, working in an eccentric groove, keeps the teeth out at full length for two-thirds of the drum's motion round while it pulls in the teeth in the course of the other third and during the pulling-in process the combs are most effectually cleaned. The drum and combs can be speedily elevated or lowered to suit the crops on which the farmer may have to operate.

The machine seems ingeniously designed, substantially made and well-finished, but its price—from £24 to £28—looks rather high. Possibly, however, it may by-and-bye be brought out at less money. As it was only taken to this country last year and has not yet been much tried, there have not been many sold yet, but we are informed that it has been favorably received in Continental countries, and some hundreds are employed in Denmark, Sweden, Norway and Germany. Lord Kinnaird, with a keen eye to anything in the way of agricultural advancement and improvement, with a characteristic desire to introduce and demonstrate the utility of labor-saving machinery, has, we believe, already secured one of these machines, and will no doubt have it fairly tried during the present summer.

Mowers and Reapers.

Values of the Points

The following are the values given to the points of mowing and reaping machines at the international field trial held in Bucks Co., Pa., during June and July. The points were arranged under five heads, grouped into three divisions, those under each division being first determined by a separate sub-committee of experts, then submitted to the full committee, and finally reported to the international jury. Total number of points, 29. Total value of points, 1,000.

Division A, construction and durability

Construction.

1. General harmony of parts	85
2. Adaptation of parts	80
3. Mechanical construction of parts	100
4. Simplicity of construction	110
Total	275

Durability.

1. Materials and strength of parts	80
2. Combination of parts	45
3. Provision for compensating wear	23
4. Facility with which parts broken may be replaced	25
Total	173

Division B, work; and safety and ease of management.

Work.

1. Quality of work	125
2. Variety of work	65
3. Adaptation for work	35
4. Speed - fast or slow	10
5. Width of cut	5
6. Freedom from noise	3
Total	233

Safety and Ease of Management

1. Safety to driver	40
2. Safety to horses	15
3. Position of driver's seat, foot rest and levers	25
4. Facilities for backing and turning corners	20
5. Facility for regulating height of cut	35
6. Ease of transfer	10
7. Accessibility to parts	30
Total	175

Division C, draft.

Draft.

1. Power required to draw machine, out of gear	5
2. Power required to draw machine, in gear	5
3. Actual power required while cutting	120
4. Proportion of weight made available to driving knife	10
5. Extreme vibration of dynamometer needle while cutting	25
6. Irregular draft	30
7. Side draft	20
8. Weight on horses' neck while cutting	10
Total	225

The drafts as indicated by a self-registering dynamometer, having the value 120 in the scale of points, were expressed in numbers of that scale, and not merely by the number of traction pounds, as is usually done.

To convert these pounds into points of the schedule, the machine having the lightest draft of all those of its classes when cutting was rated at the full number—120 representing its value on the scale adopted; other machines ranging below it according as their draft was greater. Their true position in the scale under this head was then ascertained by inverse proportion. Thus, suppose the number of traction-pounds of the machine of the lightest recorded draft 94 lbs., and of two other machines 130 and 190 lbs., respectively; then on the scale, the machine of lightest draft would stand 120; the standing of the second machine by the proportion 130:94:120 to the number sought, 87. For the third machine the proportion would be 190:94:120 to the number sought, or 59. The numbers 120, 87 and 59 representing, on the scale of points, the traction pounds, 94, 130 and 190 recorded by the dynamometer.

Value of Manures.

Dr. Sturtevant gives in the *Scientific Farmer* the following estimate of the value of cow dung and horse dung and their equivalents in chemicals.

COW DUNG.

	Cart load.	Ton.	Cord.
Nitrogen	6.46 lbs	7.60 lbs	30.40 lbs
Potash	6.12 lbs	7.20 lbs	28.80 lbs
Phosphoric acid	2.72 lbs	3.20 lbs	12.80 lbs

HORSE DUNG.

	Cart load.	Ton.	Cord.
Nitrogen	7.42 lbs	10.60 lbs	23.85 lbs
Potash	7.14 lbs	10.20 lbs	22.95 lbs
Phosphoric acid	5.74 lbs	8.20 lbs	18.45 lbs

Calling phosphoric acid worth 12 cents a pound, potash 6 cents, and nitrogen 25 cents a pound, we have the following values:

	Fresh horse manure.	Fresh cow manure.
Cart load	\$2 80	\$ 2 24
Ton	4 13	2 63
Cord	9 30	10 64

The amount of chemicals which would answer to the chemical equivalent of this dung, is as below for stable dung. We could take for the cord.

132 lbs. pure superphosphate at \$10 per ton,	\$2 64
183 lbs. dried blood at \$60,	5 49
43 lbs. muriate potash at \$60,	1 29
Total	\$9 42

OR

	Nitrogen	Phos. acid.	Potash.
181 lbs. refined guano,	5.5 lbs	18.4 lbs	3.6 lbs
141 lbs. dried,	18.4 lbs
37 lbs. muriate potash,	10.2 lbs
Total	23.9 lbs	18.4 lbs	22.8 lbs

Of a value of \$11 32.

From these tables a farmer may learn much—the value of manure of the best quality, and its value as compared with fertilizers; always bearing in mind the cost of application. Also the necessity of using head work in buying fertilizers so as to obtain the most for his money. A little carelessness here may cost much. In the two calculations given, we have the same quantity of valuable ingredients; costing in the one case \$9 42, in the other \$11 31—a difference of \$1 90. Sufficient pay, indeed, for a few moments of study.

Oil the Harness.

Have your harness repaired, if necessary, before a drier season sets in. Wash it thoroughly with warm soft water and Castile soap, and brush out every particle of dust before putting on the oil. This is the important point. Better not oil at all than to apply it on dirty leather. The harness should be taken apart and the pieces washed and oiled separately. Rub on the oil while the leather is softened with the water. It can be applied at once if the leather is rubbed a little with a dry cloth; it should be soft, but not too wet. After applying the oil, hang up to dry for a few hours, till the oil is absorbed. Old harness that has been neglected and is dry and hard, had better not be oiled; it will do no good, the evil is already done. The fibres of the leather have lost more or less of their tenacity, and oil will not restore it; in fact, by softening the leather it only weakens it, just as a wet sheet of paper will tear more easily than a dry one. Oil does not add to the strength of leather; it merely softens it and keeps it from cracking; it is a preventive of decay—not a restorer. Harness are now so high that it is more than ever important to take good care of them. Never let them suffer for the want of oil; keep in good repair and they will last as long again.

Getting Rid of Twitch Grass.

I find the best way to be rid of this grass is the most thorough way, where it pays to fight it vigorously, as in a garden—upon the farm, where it competes with farm crops, a more prolonged fighting may be allowable. But wherever there is much of hand labor, we must rid ourselves speedily of this grass, and the thorough and efficient course to this is to make the land abundantly mellow as deep as the roots extend, using such implements as will not break the roots, and then to fork out the plant, root and blade, or pull them up by hand. *Never break a twitch grass from the stem.* Let the whole plant come out together, so that no fragments may be left to grow and again fill the soil. Go over the land a few times, and wherever a blade shows itself, *extract the whole plant*, and you conquer, or at least let me say I conquer when I will, and in no other way so cheaply. The time is best when the soil is dry, for then it is most light and mellow; and when the sun shines hot, so that the spread out plants quickly wither and lose their life. Then they need not be raked up and taken off at once, for their life is gone from them, and neither the damp day nor a summer shower succeeding, will set them to growing. But cheapness there is none where twitch grass is. It is an expensive enemy to battle with, at best. I will note, however, a very cheap way of getting the grass distributed over the farm, and it is a way other kinds of grass, not desirable, can be increased. To save the purchase of seed to put upon bare spots, where the grass seems winter killed, sweep the barn floor until enough seed is collected for the purpose. I have not done this; but from the distribution of the grass upon my farm at the time I came to it, I can but believe this economy had been practised. Now I think of it, there are many things I have not done, but they are not always such happy escapes from blunders.—*Cor. Scientific Farmer.*

DRILL AND HAND SOWING.—Farmers will be interested to know the results of an experiment made during the past season as to the relative merits of broadcast and grain drill sowing, which was made on the State Experimental Farm in Pennsylvania, and from which we learn that 2½ bushels, hand sowed, produced 116½ bushels; while the same quantity of seed on the same amount of land sown with a grain drill produced 127 bushels. In the face of such facts, it is astonishing that so many farmers fail to become purchasers of the valuable adjunct to husbandry—a grain drill.