grass to grow very well After the crop of rye is harvested, the young grass is not as likely to be burned up as is the case when oats and wheat are cut The change is too violent when wheat and oats are cut, and often the young grass is entirely lost

Although the disposition of rye is to throw up tall stalks with very little foliage, it will produce a great amount of feed if it be prevented from running up to seed None of the grains produce as much feed as rye It sown in September, it will afford pasturage late in the fall, and will be in condition to furnish feed early in the spring Fall sown rye may be pastured in the spring as late as May and will then, in a favorable season give a good crop of grain The seed is so tenacious of life, that it may be sown so late in the fall that it will not germinate till the next spring.

In some places it is common to sow rye in pastures and go over the ground with a harrow The effect is excellent if the grass is scattering, or if there are patches that have been killed by the cold or drouth. The rye will afford a variety of feed which is very desirable in a pasture It will occupy land which would otherwise grow up with weeds or mosses. It is a good plan to sow rye in a field that is inclosed by itself, so stock can be turned on it in the spring or fall without injury to other crops.

As a crop to turn under for the purpose of green manuring rye ranks next to clover. It has the advantage over clover that it can be grown much sooner. It is an excellent crop to turn under on sandy soil when it is the intention to plant potatoes. Rye is also a good manure for corn and wheat. When ploughed under it decays very quickly, especially when it is covered by sandy soil. Rye is a crop that does not flourish well in damp soils, and should never be sown on soils likely to be very wet, even for a few days

Rye-bread is rarely eaten by Americans, notwithstanding its excellence. Most foreigners, especially the German and Scandinavians, eat it, and prefer it to bread made entirely from wheat-flour. The color is the only objection against it for making bread. It has an agreeable, sweetish taste, and remains moist a long time after it is baked Mixed with corn meal it forms that most excellent article of food so much used in the east, and known as Boston brown bread. As a rule, wheat muffins are used in the west in the place of rye meal in making tea bread.

Rye makes excellent feed for cattle and horses, especially where the object of the feed is to add to the growth of flesh rather than to the formation of fat. Mixed with corn meal it forms a feed that cannot be surpassed, as it contains the right proportion of flesh and fat forming principles. The straw of rye in most localities is worth considerably more than the straw of wheat and oats. In the vicinity of large towns it is in demand for making beds, for packing articles, and for various other purposes.

The chief objection to raising rye is the great fluctuation of prices. Crops of which only a limited amount is raised are liable to fluctuate much more than those of which very large quantities are raised and consumed. This is so from the fact that a very small number of persons control their sale, and the smaller the number of dealers, the greater the likelihood that they will form combinations to regulate prices. In the case of rye they generally send the price down when farmers want to sell, and send it up when they want to buy for seed.—*Chicago Times.*

Commercial Fertilizers Adapted to Wheat.

A paper by Mr. Conrad Wilson was read at a late meeting of the American Institute Farmers Club. After giving figures showing the average production of wheat in that State to be less than twelve bushels per acre, he asks if that average cannot be doubled, and answers the question in the affirmative. He then proceeded to point out how it could be done and in the course of his remarks, gave the following condensed account of the result of the use of various kinds of fertilizers:

Among the manures adapted to this crop the following have been used with more or less profit, and some of them with remarkable success:—Animal dung, guano, malt dust, rape dust, bran, dried blood, sulphated urine, nitrate of soda, sulphate of soda, nitrate of potash, dissolved bone, soot, ashes, salt, &c. As every farmer is supposed to understand his own soil better than any one else, he can himself best determine which of these is most likely to increase the crop. In cases that have come within my own knowledge, a top dressing of soot and salt has materially improved the yield of wheat, both grain and straw In one case cited by Professor Johnson the soot alone increased the yield from forty four to fifty-four bushels per acre. Rape dust drilled in with wheat has been known to increase the grain from twenty-nine to thirty-nine bushels per acre, and the straw about twenty-five per cent.

The following experiment on three different plots of wheat, by Mr Burnett, of Galgirth shows a very striking result: Plot No 1, not manured, 31½ bushels per acre; plot No 2, sulphated urine and wood ashes, 41 bushels per acre, plot No 3, the same, with sulphate of soda, 49 bushels per acre.

From experiments in top dressing wheat with nitrate of soda and salt the following is reported by Dr Voelcker in the journal of the Royal Agricultural Society: Plot No 1, not manured, 27 bushels; plot No. 2, 1½ hundredweight nitrate of soda, 38 bushels; plot No. 3, 2½ hundredweight guano, 40 1-10 bushels; plot No. 4, 150 pounds nitrate of soda and 1½ hundredweight of salt, 40 6-10 bushels.

The beneficial effect of nitrate of soda and common salt is further indicated in the following case cited by Professor Johnson, from which it appears that the product of straw is increased no less than that of grain:—

Plot No. 1, not manured, 37½ bushels of grain, 27 hundredweight of straw.

Plot No 2, one hundredweight nitrate of soda, two hundredweight of salt, 45 bushels of grain, 36 hundredweight of straw.

The bran of either wheat or rye, when partially fermented with urine, is a powerful manure for the cereal grains as well as for roots. Though it is in general the best economy to feed the bran and make it serve a double purpose, yet the peculiar effect of the urine in this combination has been known to give results that justify the experiment by making it profitable

The "complete fertilizer" of M. Ville is highly commended for wheat, and has proved itself capable of large results Yet it is doubtful whether the cost does not, in many cases, nearly counterbalance the increase of yield

"Fleming's peat compost" is a useful and comparatively inexpensive manure. Its effect on hay and grass is quite remarkable, and if used in connection with animal dung, it would be nearly certain to increase the yield and profit of wheat. It would in fact be safe to assume that, in most of the cases here cited, the effect would be enhanced, and the result rendered more profitable by a previous application of well-rotted yard manure.

Experiments with Oats.

The following experiments with oats were made this season at the Eastern Pennsylvania Experiment Farm

As to Quantity of Seed, &c

The oats drilled in on one-eighth acre plots April 24, on stalk ground.

Plot		*Bushels*
1	Two bushels of seed per acre	94½
2	Three bushels of seed per acre	100

As to drilling and broadcasting:

1	2½ bushels drilled in (Bickford & Huffman's drill)	117
2	2½ bushels broadcast and harrowed in	110½

Fertilizers; drilled or surface sown:

1	Fertilizer drilled in with seed	124
2	do sown on surface and harrowed in	104

Productiveness of barley and oats:

		Per Acre
1.	2 bushels barley per acre—sown	40
2.	2½ bushels oats per acre—sown	20 21 3

With Different Fertilizers.

These fertilizers were applied in the spring of 1871, on ½ acre plots and plowed down for corn, ground re-ploughed for oats this spring.

Plot		*Pounds*
1	Nitrate of soda, $10 worth per acre	81
2	No Fertilizer	74½
3	Sulphate of ammonia, $10 per acre	89
4	Barnyard manure	102
5	Pure ground bone, $10 per acre	105
6	Bone superphosphate, do	115
7	Acidulated S. Car. rock do	118
8	Night soil, 8 bushels	127

With Lime.—The lime was applied to the preceding corn crop in the spring of 1871, and ploughed down, oat ground ploughed April 15; oats drilled in April 22, at the rate of 2½ bushels per acre. Plots contained ⅛ acre. All harvested July 20.

No	*Quantity of Lime*	*Lbs. of Oats.*
1.	50 bushels per acre	95
2	50 bushels per acre	91
3	100 bushels per acre	90
4.	100 bushels per acre	101
5	200 bushels per acre	85
6.	200 bushels per acre	94½
7	No lime	103
8	No lime	98

With Different Varieties.

The ground used for these experiments was in corn last year; was ploughed for oats April 14 and 15; oats sown broadcast April 24, at the rate of 2½ bushels per acre.

No	*Varieties of Oats*	*When ripe*	*Pounds of straw*	*Bushels per acre*
1	Surprise	July 21	2,080	84½
2	White Schoonen	July 25	3,210	44½
3	Houghton	July 22	2,330	34½
4	Fellow	July 22	2,060	40½
5	Early Yellow	July 25	3,440	44
6	Hulless	July 24	1,090	15
7	Black Norway	July 23	2,856	38
8.	Canadian	July 22	1,560	30
9	Somerset	July 22	1,963	32

The Decline in the use of Guano, which has been especially marked in Great Britain, less so in this country, is ascribed by Mr. Lawes, and with good reason, to the falling off in quality. Since the Chincha Island supplies failed, no such high grades have been in the market, still the price remained the same. This, coupled with the fact that the quality varies greatly even in the same cargo, and that the composition was not guaranteed, led to the results above indicated. Improvement in these particulars is now looked for, and the prospect is that the trade will be placed on a sound footing again.

Spreading Manure.—A writer in the *New England Farmer* gives a bit of experience in manuring which is against spreading manure over the surface in autumn. Late in autumn he carted out fourteen ox-loads on one-half acre and spread it, expecting to plough the ground at once, but a sudden freeze prevented. In the spring he carted out manure from the barn cellar and covered the adjoining ground. The whole was then ploughed and planted with corn. The crop was much better on that portion manured in the spring, although the land was poorer. The writer believed the manure spread in the fall lost its ammonia through the winter, as he detected the volatile portions whenever he passed near

Removing Stumps.—A friend asks us what can be done to get rid of stumps in fields—whether crude oil would not cause the stumps to burn readily. In our experience we have found it preferable to remove stumps with machines made for that purpose and burn them afterwards, if desired. It is slow work burning isolated stumps in a field and the same amount of time spent in uprooting them will be much more effective. A good team, horses or oxen, with a stump machine will clear quite a space of ground in a day, and if the ground be stony, the work may be further progressed by filling the holes where the stumps came from with stones to within eighteen inches or two feet of the surface Crude oil is not very inflammable and unless used in large quantities its only effect is to clear the surface of the stump and make it last even longer than it otherwise would.—*Rural New Yorker.*

Paving Farm-Yards.—For paving with stone, large, flat stones are objectionable, because stock are liable to slip on them and be injured. Flat stones, not more than eighteen or twenty inches square, however, can be employed for this purpose, but even then, it is better to alternate them with rows of cobble stones. On a heavy soil it is desirable to draw in a coating of fine gravel, six or eight inches thick, in which to set the stones, bringing them all to a level by excavating to let the large ones down so that the upper surface of all may be at an equal height. As they are set, they should have fine gravel scattered over them to fill up the spaces between the stones, and a paver's pounder should be used to drive them all down firmly, so as to leave an even surface, sloping regular in accordance with the designated grade towards the centre of the yard. A trowel is useful in laying cobble stone pavement, in order handily to fit the stones into the soil, that they may all be level on the top, and a stretched line as a guide is a great help for this purpose.

Soft-Wood Ashes.—W. J. F. says, in a communication to the *Country Gentleman*:—"Many people unthinkingly suppose that all ashes are alike in value. Nothing could be farther from the truth. Ashes from some kinds of wood are almost valueless, and the same is true of soils. Some years ago a large heap of button wood limbs was burned in one corner of a neighbor's field. The ashes were left on the ground. The next year the wheat grew so rank and heavy on this spot that everybody noticed it. "Yes," said I to a neighbor, "you will see when that wheat ripens, that the straw will be bright, and the heads well filled with the best of wheat." I argued that the known tendency of potash to form the silicates which give straw its strength. Judge of my mortification when the wheat fell down before ripening, and the heads never half filled. The button-wood branches evidently furnished no potash and the soil itself was deficient in that element. Of course such wood would be worth very little to burn as manure In a postscript, the same writer adds:—Since writing the above, I noticed that Prof. Johnson has decided that silica is not essential to plants, and is not needed to strengthen the straw of grain. I wrote the article under the impression that science taught otherwise. Under all these circumstances, I retract all theories broached in the above communication, leaving only the facts to stand for themselves.

Exposing Manure.—Some of our correspondents advocate the fall spreading of manure for hoed crops the following year. My experience does not convince me of the value of this practice. Late in the autumn of 1868 I spread 14 ox-loads of barn manure on about one-half an acre of sod ground, intending to plough it in before the ground froze: but the sudden freezing of the ground prevented me, and it laid spread on the surface all winter. I have heard it said by some writers that barn manure does not evaporate ammonia in cold as in warm weather; but in December, as I passed near this piece of land, I noticed a very strong scent of barn manure on the air; and if there is any virtue in ammonia in manure, a large portion of it was lost in the atmosphere that winter, as the result proved the following year. The next spring I covered the adjoining piece of land, of about two acres, which was old ground, and which bore a crop of potatoes the year before, with about the same quantity of green manure from the barn cellar, the whole being ploughed in in the spring, both old and new ground, and planted to corn—that on the old ground with green manure being good, and that of the fall spreading on the sod ground being exceedingly poor. This I have ever since considered a fair test, and I have never considered it good husbandry to expose barn manure containing volatile ammonia to the action of the atmosphere any more than to sun and rain, the plausible reasoning of agricultural writers to the contrary notwithstanding.—*New England Farmer.*