

Exhaustion of the Soil.

The extent to which the alimentary properties or nutritive juices of the soil are extracted or diminished by vegetables is, as a general thing, in the precise ratio of the size and weight of the crops taken off. Experience has long since demonstrated that, with respect to the cereals, the exhaustion of fertility is in direct proportion to the amount of actual nutriment which the plants, including the straw and grain, contain.

Wheat is, perhaps, more exhausting in its effects upon the soil than rye, and rye more exhausting than barley, and barley more than oats. This opinion is predicated upon the results of chemical analyses, although, we are aware, in direct contrariety to the opinion entertained by many practical men who consider oats a more powerfully exhausting crop than either of the other—wheat or barley.

According to the most elaborate and most highly satisfactory experiments of ERNSTOR, the different quantities of nutrimental or actual alimentary matter—for instance, gluten, starch, and mucilaginous sugar—in the different kinds of field crops, are as follows:

	Per cent
In Wheat.....	78
" Rye.....	70
" Barley.....	70
" Oats.....	58
Peas.....	74
" Lentils.....	75 1/2
" French Beans.....	85
" Windsor Beans.....	58 1/2
" Horse Beans.....	73

The amount of nutritive juices in these substances therefore, is as follows:—

	Weight.	Juices
Wheat,	92 lbs.	71 7/10 lbs.
Rye,	86 "	69 2 "
Barley,	82 "	49 0 "
Oats,	62 "	30 16 "
Peas,	103 "	75 6 "
Horse Beans,	103 "	75 10 "

Assuming these data as correct, and allowing for the difference in the nature of the succulent constituents—which is very obvious to the chemist—as well also as in the stem and leaves of the respective plants, the entire series of experiments and examinations relative to the question under consideration, demonstrate conclusively that they have the following relative proportion, each to each, so far as regards their exhaustive effects upon the food or producing power of the soil:

Wheat.....	13
Rye.....	10
Barley.....	7
Oats.....	5

Hence we deduce the collary that—

- 6 bushels of rye are equal to 4.61 of wheat.
- 6 bushels of rye are equal to 8.53 of barley.
- 6 bushels of rye are equal to 12 of oats.

We do not vouch for the accuracy of these assumptions; all we can say is, that they are remarkably fortified and borne out by the most accurate chemical experiments which have as yet been made. If erroneous, science and experience are equally at fault.

If the conclusions arrived at are relied upon, and if they are correct, they cannot fail to prove of essential service to the farmer in the distribution of manure upon his several crops. It will enable him to proportion it to his various crops, more according to their several needs than he has heretofore.—*Maine Farmer.*

About Red-Root.

I was telling you last month that the red-root was so abundant in my summer-fallowed wheat that I intended to plough the land this fall and plant it to corn next spring. John Johnston has kindly written me on the subject. He says:

"Since looking over the *Farmer*, I opened the letter to say you can not kill red-root with a corn crop. It will only vegetate in August and September, and, if warm, in the first two weeks in October, and in no other months of the year. If the land is pulverized in August, and ploughed in October or in April, you will destroy a vast quantity; but if a clayey soil this has to be repeated for several years before it is all destroyed."

He says red-root has troubled him more on his farm than any other weed. He has paid \$500 for pulling and hoeing it out of his wheat. He conquered it at last, but it took many years. Where it

abounds, the plan is to summer crop for some years, and this will kill it or so reduce it that it will not be much trouble to pull up what there is in the wheat.

It seems to be a fact that red-root troubles no crop except winter wheat; and my plan for killing it was based on this fact. Treat your land in the fall precisely as you would were you going to sow winter wheat, and then kill the red-root in the spring by ploughing, cultivating, &c. If we had a machine to hoe our winter wheat in the spring, this would kill the red-root; but till we have such a machine, we must try to kill it, as Mr. Johnston says, by "summer cropping." But summer cropping in itself will not kill it. We must, by harrowing or ploughing the land in August or September, cause the seed to germinate. This is the main point. After this is done the red-root can be killed by any course of summer-cropping that is most convenient.

I suppose a good plan would be to harrow the wheat stubble, (that is, of course, where the wheat is not seeded) as soon as it can be done conveniently after the wheat is off. This would start the red-root seed about the middle of September. Then give the field a good ploughing in the fall and sow it to barley or oats in the spring. Instead of this course, I purpose, in my own case, to plough wheat stubble in the course of a week or two—ploughing it not very deep and harrowing it afterwards. This would cover up the stubble, grass, &c., and start the seeds of the red-root. Then, sometime before "snow flies," give it a good, thorough, deep ploughing, and leave the land rough for the frosts of winter to mellow it. In the spring, plough again, harrow, cultivate, &c., and plant corn. Then if the cultivator and horse-hoe are used freely, there will be little need for hand-hoeing. Such treatment will not only kill red-root, but will destroy other weeds and leave the land in splendid order for sowing barley the next spring and seeding down.—*Genesee Farmer's Walks and Talks.*

GROWING TIMBER.—"I want to tell my story, which I know to be true and perfectly correct, as all the parties are to me well known and of unimpeachable veracity. The scene is in Berkshire county, Mass. A boy reaped wheat in a field—that boy grew to be a man, and lived to the ripe old age of 82 years. Before he died, he sat in his chair and saw a neighbour of his from day to day drawing saw logs to the mill. This man drew, had sawed, and sold 152,000 feet of lumber, and all from 3 1/2 acres of ground upon which the old man when a boy had reaped wheat. The timber was mostly pine, some oak. I believe pine will grow as fast here as that."—*BLAKE-EYE, in Country Gentleman.*

DEIHL AND SOULES WHEAT, &c.—John Johnston, under date of near Geneva, Aug. 23; writes the *Country Gentleman* as follows: "I have got one barrel of the so-called Deihl select wheat, and I shall be much disappointed if it is anything else than the Soules wheat, which I have grown ever since 1811. I sent many hundred bushels of it to Indiana and other Western States, a number of years ago, and often thought it would be well to get some of it back, thinking it might do better than that grown in this State for the last 20 years. The only difficulty in raising Soules wheat here now is, that almost every year it turns all yellow in April, and if warm growing weather don't immediately set in, it never recovers, and makes a poor crop. Sowing after the 20th September is generally a preventive, but that of late years is thought to be too late."

WHAT WERE CANADA THISTLES MADE FOR?—For the double object of cultivating the ground for man's use, and compelling man to cultivate the ground for his own benefit—to banish idleness, the scourge and curse of humanity, high or low, rich and poor. The deeply penetrating shouldered roots of the Canada Thistle search all the ground for life and growth, and bring to the surface in successive seasons, vegetable matter, which, decaying, enriches the land, and thus prepares the way for the husbandman. The tiller of the soil must then banish the preceding elaborator, and show, by his industry, that he is worthy to succeed; and, also, that he is willing to occupy the land from which he seeks to dispossess an occupant, appointed by the Creator to hold possession until earth's rightful tenant evinces sufficient faith and patience to subdue it.—*Cor. Country Gentleman.*

A WONDERFUL TREE.—In the birch wood of Culloden there is a remarkable tree, well worthy of note. Somewhere about thirty years ago a little giant of the forest was blown down in a storm, and fell across a deep gully or ravine, which it completely spanned, and the top branches took root on the other side. From the parent stem no less than fifteen trees grew up perpendicularly, all in a row; and there they still flourish in all their splendour, while the parent stem evinces no token of decay. Several of the trees are not less than thirty feet high. The tree is a larch fir.—*Elgin Courier.*

THIN SEEDING.—The following quaint bit of experience and wisdom is from Sir A. Fitzherbert's "Boko of Husbandry." "There is a seed called Discretion; if a husbandman have of that seed, and mingle it amongst his other corn, they will grow doubtless much the better, for that seed will tell him how many casts of corn a land ought to have. And if a young husband, or, it may so fortune, a man that by possibility might have grey headed experience, hath not sufficient of that seed, yet he that lacketh, it is lawful for him to borrow of his neighbours that have, and his neighbours be unkind if they will not lend this young husband part of their seed, for this seed of discretion hath a wondrous virtue, for the more it is cyther taken of or lent the more it is. Now, discretion is that part of good conduct which takes vary account rather of the difficulties, risks, and dangers of the way than of the object or rewards of the journey; and it is, we think, a fortunate circumstance that in one of the earliest specimens of 'book farming' in our language, it should have been desired that the 'young husband' do mingle it with his 'seed corn.'"

CANADIAN WHEAT GROWERS.—You may think it strange, but I question if the best farmers in America are not to be found in Upper Canada. They beat us in raising wheat; their barley is certainly superior to ours in quality, and I think the same is true of oats. In the cultivation of root crops we are nowhere. Don't get angry. We beat them in raising corn—and in all crops which partake rather of a commercial than a strictly agricultural character. We are willing to raise small crops if we can get large profits, while a Canadian farmer, partaking largely of the Scotch and English conservative character, continues on in the even tenor of his way. He is not so constantly looking for some easier method of earning a living. He is a farmer, and his father was a farmer before him, and he intends to live and die a farmer. If the midge destroys his wheat he does not, as we did in this section, propose to turn the whole country into one grand apple and pear orchard. He looks out for some variety that will ripen sufficiently early to escape the ravages of the insect.

I have often remarked that where a new kind of wheat has been alluded to in the *Genesee Farmer*, it attracts more notice, ten times over, in Canada than in this section. A few years ago I induced some gentlemen to contribute a few hundred dollars to get up a wheat show. We offered large premiums and managed, by personal persuasion, to induce a few farmers to show their wheat. The affair was essentially a failure. Had it been a big pumpkin show, it would have been a grand success. The entries of wheat at the Provincial Show are three times more numerous than at our State Fair, even when held in the centre of the wheat-growing districts, and the number of people which crowd around the samples, shows the interest which is felt in the matter. The Deihl wheat, advertised in the *Farmer* last month, attracted at once the notice of Canada farmers, and one of their agricultural societies sent a delegation to Indiana to inquire into its merits. They were so well pleased with it that they purchased eight hundred bushels for seed. Such enterprise is commendable. No wonder they beat us raising wheat.

This Deihl wheat closely resembles the Soules, and I should not be surprised if it turns out to be this variety. Its chief merit is its earliness, and it is probable that this quality is due to the fact that it has been grown for several years in a more southern latitude. There can be no doubt that, so far as earliness is concerned, we should get our seed wheat from a more southern rather than a northern latitude, and I have no doubt that should this Deihl wheat prove to be the Soules it will ripen earlier for two or three years than the Soules grown from seed raised here.—*Genesee Farmer's Walks and Talks.*