Municipal School Gardens

By J. M. Pratt, Secretary-Treasurer of Lost River Municipality, Allan, Sask.

It is generally recognized and admitted that our national welfare is directly dependent upon the well-being of our rural population. The wheels of industry are kept in their proper alignment only thru and in direct proportion to the success of the men that are tilling our soil. Without food and clothing and the demand for manufactured produce that rural prosperity brings, our great, almost inconceivably complex, economic machine must stand still and disintegrate thru disuse. Our farms are the great breeding grounds for our leaders of men, yet in the face of all this our farmers stand without a status from a professional standpoint and our census returns show small, sure percentages of increases in our urban population.

These are facts—facts that our public men are wont to use to touch the sympathies of rural constituents and that the public press uses almost daily with greater or less variation in context, but of which few men ever stop to consider the true significance.

It is equally true that every industry, every profession or trade, gives birth to its own special line of reasoning, to its own particular train of thought—but irrespective of birth, trade or profession it is the duty of every true citizen to recognize conditions as they exist—to consider the inevitable consequences that must arise from such a condition—and to aid in seeking and applying a solution.

Naturally every man is born a farmer. Every man is born with a God-given right to, and a God-given desire for, the free air and the open places of the earth and it is a perverted instinct or a perverted desire that takes men from our farms to crowd them into already overcrowded tenements in our centres of population. There is nothing unique about the existence of this condition, the usual cause and effect relationship exists. The usual platitudes advanced do not account for it. The innumerable reasons, such as long hours and shrewish farmers' wives, cannot be held wholly responsible. These, in fact, are but the results of the condition itself. The real cause is more comprehensive and more fundamental. It is the direct result of our own fixed standards of worth and our unchanging standard of recompense.

The farmer is a respected citizen. The politician respects him because he has a vote; the lawyer respects him because he is human and sometimes has difficulties with his neighbor over a line fence; the merchant respects him because he must purchase clothing and manufactured produce; the banker respects him because he has to be thrifty to live and deposits his nickels in the savings department at 3 per cent., so that they can be re-loaned at 8 or 10, but nobody on the face of the earth ever thought of respecting him because he was a farmer. For generations this conception has been maintained and this attitude received additional stimulus.

We have all been a party to it and instead of educating our children for the land have ever been increasing the distance and augmenting the antipathy existing between a university degree and that poor, lowly, despised emblem of our national welfare, the hoe.

The first consideration in every man's life is a competence—food, clothing and shelter. After these, in greater or less degree, come conveniences and luxuries. As time has passed and our pride in white hands, free from the stains of toil, has increased, the competence for the farmer has been harder to obtain and the conveniences and luxurious things practically unattainable. In just that same proportionate degree, these have become more and more the exceptions to the rule in our cities. The very commonplace bank clerk or small merchant about town must have his bath, electric lights, etc., while you can travel on endless journeys thru the rural districts and every farm wife will apologize for your having to use the common granite wash basin before sitting down to supper by the light of a sickly kerosene lamp.

Naturally it is the educated part of our population from whom we most expect results; it is the men holding university degrees to whom we should look for the proper moulding of affairs of state, if not, why maintain the institutions? And yet, not thru any fault of the individuals, but thru our own preconceived standards, we have constantly widened the distance between our institutions of learning and that profession that is actually clamoring for the services of trained intellects.

It is not a question of taking a hundred thousand men from the slums of our cities and placing them on small farms. It is not a question, necessarily, of finding homes for homeless or of teaching thrift to the degenerate. The solution means a re-adjustment of those fixed standards that we have set up and an altered mental attitude; it means that our conception of life itself must be altered to the extent of recognizing the farmer as an entity in our scheme of existence and that his profession is worthy of and will furnish mental material for the best intellects and the best equipment that our universities can provide.

This conception, with precedent to uphold it, this prejudice with age-long experience to back it up, will not be altered in a single generation. If it is a question of mental training, the logical beginning for this change is in our primary institutions of learning. I lay claim to no originality, but working upon this supposition, I have tried to make a beginning, a primitive and an insufficient one no doubt, but a beginning with a system of municipal school gardens.

The Objects

Primarily there are two sets of results to be obtained thru this particular work. First—The obtaining of a knowledge of soils and the requirements of plants and the scientific relationship existing between them, that increased production may result, and that that shadowy margin over a competence may become a reality to those who leave the public school to take up a life work on the farm. Second—That the child, thru the lesson taught by plant growth, when studied in connection with its environment, may lay a foundation on which to build a worthy superstructure. The child, who early in life can be brought to a realization of the fact that all development is governed by an invariable law, the child who is taught to understand reasons for the germination of seeds, who can understand that by this germination a condition has been created demanding more and stronger food to sustain it; who learns that if this demand is met the process but reproduces itself until the plant grows to beauty and maturity, or if the demand is not met the plant must wither and die or be dwarfed to the extent that it is withheld; that understands that where the conditions and the environment are not propitious there will be no germination and no growth and the seeds remain worthless, save for their potential worth; the child who understands these things and is shown the analogy that exists and is taught to apply the principle to his own physical and mental development, will have created within himself a personality which, thru the very fulness of its understanding, cannot be less than worthy.

In addition to these things the school garden adds the practical element to primary education. The child with a small plot of land all his own goes thru all his work with the pride of possession in his heart. That greatest stimulus of industry, rivalry, is awakened; there is an added attraction at the schoolhouse, and that other lesson so necessary to success, that all work should be play, is learned.

A Successful Experiment

The work undertaken in Lost River Municipality in 1914 was wholly experimental. There were eight schools that took up the work. The teachers

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The Feeding Value of Corn

And its Comparison with other Grains for Feeding Purposes

By W. J. Rutherford, Dean, College of Agriculture, Saskatoon, Sask.

It is economy to produce on the farm as much as possible of the rations for our different classes of farm animals. For various reasons, it happens sometimes that the stockman finds himself short of one or more of the important grains or roughage and then he must set about to find substitites. Or it may be that one important part of the ration is so high in price that it will pay him better to sell it and purchase one or more others to substitute for it. All our grain feeds are high in price this year, this is especially true of oats. Good wheat is too expensive to substitute, especially if it has to be purchased. The principal grain grown for stock feeding in the Middle Western States is corn, and it happens that there is a fairly good supply of feed corn on the market at a moderate price, at least, when compared with that of other grains.

Grains and other foods fed to animals contain the following important classes of compounds: water, protein, carbohydrates, fat, crude fibre and ash. The protein is the nitrogenous part. The animal uses it to grow muscle, hair, tendons, wool, eggs and to produce milk and sometimes for other purposes, such as making fat and producing heat and energy. The carbohydrates, fats and crude fibre are used by the animals for the purpose of making fat, producing heat and doing work. Carbohydrates include the starches and sugars. Fats are about two and one-quarter times as valuable for these purposes as are carbohydrates.

Ash is used chiefly for making bone, milk and egg shells. The expensive part of food is usually the proteid, but this year it happens that the carbohydrates are very expensive. The animal can use only as much of these different parts of the food as it can digest. Proteids are not all digested. Crude fibre is found in large quantities in the straws, ripe hay, bran, shorts, and more or less in all feed stuffs. It is very indigestible and so is not worth much except to lighten up a ration. Young and growing animals and dairy cows require rations fairly rich in protein, while fattening animals and working horses use more carbohydrates.

The following table shows the number of pounds of digestible nutrients in 100 pounds of food products, also the number of pounds that are indigestible, together with the ash content:

	Water	Protein	Carbohydrates	Fat	Indigestible	Ash
Wheat	10.5	10.2	69.2	1.7	8.4	1.8
Barley	10.5	8.7	65.6	1.6	13.2	2.4
Oats	11.0	9.2	47.3	4.2	28.3	3.0
Flax seed (ground)	9.2	20.6	17.1	29.0	24.1	4.3
Bran	11.9	12.5	39.2	2.7	33.7	5.8
Shorts	7.7	12.5	46.9	2.8	30.1	4.6
Corn	10.9	7.9	66.7	4.3	10.2	1.5

If we compare barley, wheat and corn in the above table, it will be found that they are very much alike. They contain about the same amount of water. Wheat is richer than barley and barley a little richer than corn in protein. In carbohydrates, wheat is a little richer than corn and a trifle richer than barley. Corn in much richer in oil than either wheat or barley, about two and a half times. In ash the oats are rich, barley fairly so and corn poor. The ash of corn is poorer even than it appears to be owing to the fact that the ash contains but little lime and phosphorus, both of which are necessary for growing bone.

When 100 pounds of the following grains are eaten by a farm animal, the results are as follows:

Wheat	81.1 pounds digested
Corn	80.0 pounds digested
Barley	75.9 pounds digested
Flax seed	65.3 pounds digested
Oats	60.7 pounds digested
Shorts	62.2 pounds digested
Bran	56.4 pounds digested

The following grains unground are usually bought by the bushel; if ground, by the 100 pounds or by the ton:

1 bushel wheat weighs	60 pounds
1 bushel corn weighs	56 pounds
1 bushel barley weighs	48 pounds
1 bushel flax seed weighs	56 pounds
1 bushel oats weighs	34 pounds

Bran and shorts are sold by the 100 pounds or by the ton.

One ton, 2,000 pounds, wheat furnishe 1,622 pounds digestible matter; corn, 1,600; barley, 1,518; flax seed, 1,206; oats, 1,214; shorts, 1,244; bran, 1,128.

The feeding value of flax seed meal is higher than represented here, owing to its high content of oil.

Grains Compared as Feeds

When the selling price of oats gets to 34 cents per bushel, it is time to look about for a substitute, and to do this intelligently one must know the characteristics and properties of the different grains, the purpose of the ration, and the particular classes of animals for which the ration is intended.

Oats have about 30 per cent. hull. This makes them bulky and light and renders them the safest of all the grains to feed to all classes of stock. It is not a fattening feed as is wheat, barley or corn. It is especially useful for feeding calves, colts, dairy cattle, brood sows and horses. The horseman finds no grain quite so satisfactory. They give spirit to the horse as no other grains do. The size and flavor of the grains induces more thorough mastication and this in itself is valuable. Oats may be used to give variety and to help balance a ration.

Wheat is a heavy, soggy grain for feeding purposes. It sticks to the animal's teeth and makes it uncomfortable. When fed alone it is the cause of much digestive trouble. It is a fattening food, and when mixed with one-fifth bran or oats, gives good results for such purposes when fed to hogs or beef cattle. Good wheat is usually too high priced for feeding purposes, but frosted wheat gives

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