

Soils and Crops

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WESTERN CANADA TURNS TO CORN.

It was long universally accepted that the area where corn might be raised successfully and profitably stopped long short of the line dividing the United States from Canada.

For years no one dreamed of attempting this crop on a commercial scale in Canada. American experts said it couldn't be done and Canadian farmers believed them.

It has been only of very recent years that the Western Canadian agriculturists, having arrived at that state of development where they were in some need of a fodder crop, began at all seriously to question the infallibility of these theorists. Though corn has been grown on the Western Canadian prairies on a very small scale, it was not until 1919 that a corn crop was considered even as a possibility on the prairies.

The four crop years that have elapsed since that time have wrought something like a revolution in Western Canadian agriculture.

Farmers there had need of such a crop, and were merely waiting for the feasibility of its production to be proved.

Fields of one hundred acres or more of corn are now not unusual in Western Canada, and practically every farm has at least a small acreage under this crop.

In 1923 there were 148,089 acres devoted to corn in the three provinces of Manitoba, Saskatchewan and Alberta, whereas in 1915 there were only 10,168. The annual corn production in the same period has increased from 26,900 tons to 781,800 tons.

The prices received for the 1923 Western Canadian corn crop were \$4.70 a ton in Manitoba, \$5.25 in Saskatchewan and \$3 in Alberta.

In the depressed condition of prices obtainable for farm products in that year these were much lower than in previous years, but even so, in the case of each of the three provinces, the value of an acre of corn was practically double that of an acre of wheat.

In the fall of 1923 the first corn growers' association of Western Canada was formed in Southern Alberta where, on the irrigated lands, an average for fodder corn of fifteen and a half tons to the acre has been achieved

Early in 1923 the Alberta Corn Growers' Association, a provincial organization embracing the entire province, came into being, and this was almost immediately followed by the formation of the Saskatchewan Corn Growers' Association. Steps are being taken at the present time in Manitoba to form a similar association.

Those who said that corn would never be raised north of the international boundary should be interested to learn that the first corn show ever held in Western Canada was at Prince Albert, in Saskatchewan, more than 200 miles north of the line, where just as fine corn was produced and ripened as in Southern Alberta.

The judge of this show, Professor Champlin, of the Saskatchewan Agricultural College, who was formerly at the North Dakota Agricultural College, said: "I once thought that North Dakota was the northern limit of the Corn Belt. This show has shown that excellent corn can be grown several hundred miles farther north than was believed possible twenty years ago. The Yellow Dent that captured the sweepstakes is the equal to any corn of its kind I have ever seen."

In the development of dairying the need for economic silage was very urgent, and the feasibility of corn fodder has brought the dairy industry along in a phenomenal manner.

Formerly there were no silos. Corn has changed that. To-day silos are being erected so extensively and rapidly in this Western territory that one may confidently anticipate the time when one of these will be the natural adjunct of every prairie farm where a few cows are kept.

The Corn Belt has unquestionably shifted north. The year 1923 saw the most pronounced and general acceptance of that fact in Western Canada since the visioning of a broader, more intensive prairie agriculture.

When this triumvirate of Manitoba, Saskatchewan and Alberta, comprising a broad area which it was said would never grow wheat, accounts for wheat harvests of substantially over 400,000,000 bushels, one naturally hesitates a long time, especially in the light of recent experience, before committing oneself to prophesy on the future of the territory in corn growing.—E. L. Chicanot.

Oddities in Cows and Horses Mouths

BY DR. A. S. ALEXANDER.

A perplexed and agitated lady who had been trying to detect the intentional errors in some prize puzzle asked my assistance.

"I've corrected all of them," she said, "except that plaguery one of the cow's head. For the life of me I can't tell what's wrong with it, unless it be the expression of its contentment—for I never saw a moo-cow show such a hideous grin. Do, please, look at the picture and tell me what is incorrect!"

Well, I did. That alleged cow had a most fearful and wonderfully constructed visage, for the lips gaped apart and disclosed a set of huge incisor teeth in both the upper and the lower jaw.

All you real farmers know that there are no incisor or pincer teeth in the upper jaws of your cow and sheep. They wear eight incisors, the same as we humans. We have four above and four below, but in the ruminant animal all of them are in the lower jaw. A dental pad or cushion of gristle replaces the incisor teeth in the upper jaw. Probably you have noticed that the incisors are somewhat loose, shovel-shaped, and directed forward. That is so they will not injure the dental pad.

The horse, on the contrary, has six rigid upright incisors in both upper and lower jaw, and in the male there is in addition a canine tooth, or tush, on each side, above and below.

Some farmers do not know that a cow's incisor teeth naturally are somewhat loose. I have several times been asked what disease caused the looseness which men have discovered for the first time on examining the mouth of a sick cow. It is also erroneously believed by some men that silage loosens the teeth of cattle or causes them to drop out. Were it so, thousands of silos would not now be benefitting farmers and livestock throughout the land.

The mouth contains some other interesting things. A man whose cow took sick once wrote me that on opening its mouth he noticed a number of slim-necked "warts" growing from the mucous membrane lining the cheeks.

"Although I snipped all of them off with scissors, she is not a bit better," he said. And no wonder. These were not warts, but fleshy protuberances called papillae placed there by the Creator to help keep the feed in the mouth and between the grinding teeth during mastication of cud. You can also see a single row of very large papillae on the inside of each cheek in line with the grinding surfaces of the molars. The bars or ridges of the hard palate lie, the roof of your cow's mouth have sawlike teeth projecting

backward and provided for the same purpose to detect the papillae.

There are no papillae on a horse's cheeks, and the ridges of his hard palate are smooth. When they swell just behind the upper incisors, the horse-man calls the condition "lamers." Behind the hard palate the soft palate slopes downward and backward like a curtain between the mouth and the vestibule of the throat (pharynx). During the act of swallowing it is raised to permit passage of food. At other times it lies upon the tongue and prevents breathing through the mouth or vomiting.

I know of an ignorant "quack" who mistook the soft palate for an abscess, and made swelling or abscess in the mouth of a horse suffering intensely from sore throat. He punctured it in three places with a red-hot poker. Only by inserting a silver tube in the windpipe was the poor beast kept from dying.

Your cow's tongue is thick and rough, like a coarse rasp, with the points directed backward. The tongue of the horse is quite different, being long, slim, and smooth. The cow curls that rough tongue around tufts of grass when grazing, pulls them between her incisor teeth and dental pad, and then crushes and breaks them off. The horse scoops grain into his mouth with his lips, and nips off grass with his double set of incisors.

Nature has provided different methods of grazing and taking feed into the mouth so that your various animals may subsist in the same pastures. Your sheep nibbles close to the surface of the ground. Its upper lip is cleft, and each section is moved at will when eating grass.

Mr. Hog goes the sheep one better, for he digs under the surface for such things as white grubs (from which, by the way, he contracts his thorn-headed worms) various roots and certain minerals he needs to correct the dyspepsia from which he usually suffers. To prevent hogs from excavating your pastures, you insert rings in the strong nose cartilage, or sever it with nippers made for the purpose. Do you know that the hog's nose also is fitted with a bone called the os rostri, which helps him to root for a living? That is a hidden point the anatomist can disclose. When telling you of it he will likely mention two bones called the ossa cordis, found in the cow's heart and not in that of other animals.

Nature has supplied all sorts of prehensile and accessory organs that every animal might obtain feed. Thus we account for the long neck of the giraffe, the immensely strong trunk of the elephant, the inquisitive, insensitive proboscis of the ant-eater, the fly-

catching tongue of the lizard, and the caudal climbing appendage of the monkey. And have you watched how animals masticate feed when they have taken it into the mouth? "Ow 'e do chew on 'is bit o' meat, don't 'e, Charlie?" said a cockney girl to her beau, as they watched a zoolion eating its Sunday dinner of raw horseflesh, and Charlie answered: "Blime if 'e ain't! 'E's gettin' the full flavor, ye see!"

In the same way every animal chews feed to obtain its relished taste and needed nutrients.

The horse starts eating by giving a side chew to the right or left. He continues the work on the other side of his mouth until the muscles tire and the flow of saliva from the glands is about exhausted. Then the opposite side takes up the process for a similar time, until the feed is fully insalivated, ground, and swallowed. But the grinding is not done between perfectly level molar teeth. In the horse the upper jaw is wider than the lower, and the teeth grind in somewhat scissor-like fashion, not completely cross-

ing one another. The result is that sharp points of enamel are left unworn next to the cheeks above and the tongue below, and, unless filed off periodically by a veterinarian, seriously interfere with mastication. It takes a horse about one and one-half hours to eat six pounds of dry hay, and more than half an hour to eat the same weight of oats.

In your cow the motions of chewing are more complex, being transverse, longitudinal, vertical, and somewhat rotary. If you watch a llama at meal-time in the zoo or a moving picture, you will be interested to note that the lateral movements of the jaws are regularly alternated from one side to the other.

Old Shep snaps his food, gives it "the once over," chews in all directions, and gulps it down, unless he uses the slower process of cracking and grinding bones with the tremendously strong teeth provided carnivora for the latter purpose. The hog is omnivorous, and combines all methods of mastication.

No doubt you have heard about a horse having "wolf teeth." On looking closely you may perhaps see one in each upper jaw, just in front of the first large grinding tooth. "Wolf teeth" are present in the mouths of comparatively few horses. They are small, insignificant vestiges of the seventh grinder or anterior premolar teeth of the prehistoric horse. They do not weaken the eyes or cause "moon blindness" (periodic or recurrent ophthalmia), although there is an erroneous belief that they do. Neither need they be extracted, unless they happen to interfere with the bit of the over-head check rein of a trotting horse.

The hog is the only domesticated animal still possessed of anterior premolars. They are present at birth as tiny, sharp teeth, and often are nipped

off to prevent them from causing lacerations which may become infected and induce troublesome sores.

While talking about chewing, can you tell how the grinding tables of the molar teeth of the herbivorous animals are kept rough? If smooth, they would not perform their work. You have heard that the "rasher and the upper millstone" in the grist mill have to be chiseled rough now and then to keep them efficient. In an animal the roughening process occurs automatically. The grinding table of the molar tooth is composed of material of different densities interposed or folded alternately into the structure. Of these, enamel contains about 96 per cent. of mineral matter, dentine 76.5 per cent., and cement 67 per cent. Enamel wears away slowly, dentine faster, and cement faster still. Rough ridges are left in the wearing process, and do the work of cutting and grinding feed. In carnivora, where tearing and crushing are requisite, the molars are sharp, pointed, and serrate; in omnivora, whose food is general, the teeth are mixed in character.

As the horse watches you while making some of these examinations, you may be able to see the "soot balls" hanging into the pupil from the inner edge of the iris in his eyes. And if you happen to touch one of those long hairs below the eye, and it causes the horse to wink, you will understand that it is a "tentacle" with a sensitive nerve-ending, and serves to warn the animal of dangerous objects. It acts in exactly the same way as the whiskers on pussy's nose, or those ropes dangling from an overhead beam that warn a brokenman on a box car to duck his head to keep from being struck by a low bridge.

If the horse is old, you will observe that the hair on the temples is gray, as in an aging man, and the depression over each eye is quite deep, unless it has been pumped full of air, a trick the horse "kyp" calls "puffing the gills." The horse also has two false nostrils or pouches of skin overlying the true nostrils. On the floor of each nostril, near the front, is the opening of the tear duct from the eye, which should not be mistaken for an ulcer denoting glanders.

You have of course noticed the "chestnuts," one on each foreleg above the knee, and one on the inner lower face of each hock joint; and the "erect," or horny spur, that projects from the skin in the "foot lock" of each fetlock joint or ankle, that has derived its name from these locks of hair. These excrescences are considered vestigial hoofs or foot pads of the prehistoric horse. Chestnuts are missing on the hind legs of a jackass and some mules. They are small in the fresh-skinned thoroughbred horse, and the ergots help to protect his fetlock. Sometimes, after a hard race, they are found bleeding from contact with the tiny, sharp teeth, and often are nipped



James Cassels, who was 102 last March, is Saskatoon's oldest inhabitant. He came from Ireland when he was seven years old, when Toronto had only three grocery stores. Mr. Cassels is shown with his great-granddaughter.

Home Education

"The Child's First School is the Family"—Froebel.

The Rights of Children — By Elsie F. Kartack.

Does the adult arrange his daily life to fit in with that of the child or must the child fit his to the adult's? The following illustrations may serve to show that in some cases, at least, the child is not considered.

A nightly sight from my window is that of little children, in company with their parents, hurried along so fast that their little feet barely touch the ground. And where are they going? To the picture show, of course—an unfit place for a little child. It is generally over-heated or draughty, the air is bad and the music jazy. Most likely the picture is not of the kind that will foster his taste for good. If he falls asleep he escapes the jazz awakening and to be dragged out again in the chill night air. His rest has been broken and his nerves strained.

A little boy, four years old, whose friendship I have won, comes often to the home where I live. His parents are young and sadly lacking in the understanding of children. They expect him to sit perfectly still and let them talk. He has nothing with which to play and besides he is tired as it is long past his bedtime.

"Mother," he finally ventures. No notice is taken of him.

"Mother," this time his voice is raised.

Tests With Winter Crops.

Winter wheat is sure to be one of the best of the cash crops on the Ontario farms in 1924. The yield will be good and the prospective prices are encouraging. There will likely be a very good acreage sown to winter wheat this autumn, so says Dr. C. A. Zavitz of the O.A.C. The results of experiments show that it is important to sow large, plump, sound, well-matured, unsprouted seed, free from smut and impurities, and of the best varieties, if the highest returns are to be secured.

In time for seeding this autumn, valuable material will be sent out from the College to those farmers residing in Ontario who wish to conduct experiments upon their own farms through the medium of the Experimental Station. The material will be supplied, free of charge, to those who wish to conduct the experiments and report the results in the early autumn of 1925. Any Ontario farmer may apply for the material for any one of the following seven experiments:

1. Three choice varieties of winter wheat.
 2. One variety of winter rye and one of winter wheat.
 3. Spring applications of five fertilizers with winter wheat.
 4. Autumn and spring applications of nitrate of soda and common salt with winter wheat.
 5. Winter summer and winter barley.
 6. Hairy vetches and winter rye as fodder crops.
 7. Mixtures of winter rye and hairy vetches for seed production.
- The size of each plot is to be one rod wide by two rods long. Fertilizers to be sent by express for Experiment No. 4 this autumn, and for Experiment No. 3 next spring. All seed will be sent by mail except that for No. 4 which will accompany the fertilizers. The material will be sent out in the order in which the applications are received and as long as the supply lasts.
- Of all the forty varieties of winter wheat which have been tested at the College under uniform conditions in each of the past four years, the highest average yield per acre was produced by the O.A.C. No. 104 variety. This new hybrid wheat will be included this year in Experiment No. 1.

What is the Best Breed?

At this season of the year many people are asking: "What breed shall I keep?"

It is a perfectly natural question and one that sometimes puzzles every poultryman. Since not all persons to whom a beginner might put the question would give him the same answer, it is likely that eventually he will have to answer it for himself. It is important, therefore, that he have some facts on which to base a decision.

It may fairly be assumed that egg yield is the point of most interest, since few hens would be kept if they did not produce eggs. After studying the records of several thousand hens entered in the International Egg Laying Contest, from 1911 to 1919, Dr. L. C. Dunn concludes that the similarity between the chief egg-producing breeds—Plymouth Rocks, Wyandottes, Rhode Island Reds and Leghorns—in the average number of eggs they lay as pullets amounts almost to equality.

Among these four popular breeds there is little choice as egg layers under contest conditions. The decision as to which is best for any poultryman will depend rather on the number of hens to be kept, the market demands with respect to egg color and, last but not least, on the preference of the owner.

All Wool and a Yard Wide.

The value of an article is not in the article itself. It is in the customer's conception of the article. If he doesn't see value, it isn't there, so far as the sale is concerned.

"Keep still," replies his mother. After a little pause, "Mother, I want—"

"I told you to keep still," answers his mother.

A whine from the child is followed by "I'll spank you if you don't keep still."

An impatient surly cry from the child results in a spanking and more noise. His parents and their friends consider him a very naughty child.

I will cite one more instance of injustice to children. Another couple, who have a little girl three or four years old, visit this same home. Unlike the little boy, she has been trained or perhaps cowed into absolute silence. She sits in an erect position in a straight backed chair, until, her senses deadened by the vile tobacco smoke in the room, she falls asleep. Her parents, unmindful of her, play cards and gossip until a late hour. The next day the mother telephones us the usual story.

"I don't know what is the matter with Jane to-day. She seems dull and listless and if anything goes wrong she cries."

If a mother but realized the effect that long, peaceful, regular hours of rest have upon the health and disposition of her child, she would arrange her recreation time to fit in with the little one's waking hours or else sacrifice it entirely.

THE CHILDREN'S HOUR

THE VISIT TO OLD MOTHER COON'S HOUSE.

It was the bright rays of the morning sun as it peeped through the leaves of the trees of the Big Woods that first awakened the three little Woodland boys, Jackie Rabbit, Johnnie Muskrat and Willie Woodchuck. They stretched themselves upon their bed of leaves, gave a big yawn and sat up.

"Where am I?" asked Johnnie Muskrat.

"You tell me and I'll tell you," answered Johnnie Muskrat.

"You haven't forgotten that ducking we had last night, have you, Willie?" asked Jackie Rabbit. "I don't believe I shall ever climb on a log again."

"That's right, we did have a cold bath last night," said Willie. "But now that we have learned our lesson I'm hungry. I wish I had some of mother's cakes," he said, rubbing his stomach.

"Such luxuries," said Johnnie Muskrat. "You will probably get more than that when you get home for running away."

"We didn't run away, we just drifted away," corrected Jackie. "But I feel like I would get the spanking all the same. I'm hungry, too, and no porridge in sight."

"I think if we go right in that direction we'll find home," decided Johnnie Muskrat, pointing to the east. "We can find some berries in the woods for breakfast, and maybe we will be home for dinner."

"Maybe-ee-ee," said Willie Woodchuck as they started off through the woods.

Soon they came to a berry patch with just heaps of big fat juicy berries, and the three little Woodland boys ate their fill. But in wandering around the berry patch they soon lost their way. The path in the woods was gone and they were really lost.

It was three weary, hungry and homesick little boys that slowly plodded through the woods, hoping to find something that would tell them the way. Late in the afternoon as Jackie Rabbit was hopping wearily in the lead he spied a path.

"Hip, Hip, Hurrah," he called, as Johnnie Muskrat and Willie Woodchuck ran up very much out of breath.

"But which way shall we go?" asked Johnnie.

"Let's see, the last tracks go this way," said Jackie Rabbit. So off they started to the right.

They walked nearly a mile through the briars and brambles before they came to a little log cottage hidden in the bushes. After many whispered pleadings with the others, Jackie Rabbit summoned courage to knock at the door.

"Hello, boys!" smiled a big motherly Coon as she opened the door. "What can I do for you?"

Her friendly smile gave Jackie more courage and he said, "We are lost and hungry. Can you tell us the way home?"

So in her motherly way, she told them the direction carefully, gave each two sugar cookies and a glass of milk and sent them on their way.

Age and Egg Production.

Though it is well known that pullets lay better than do old hens it is worth while to consider just how rapid is the falling off in egg production as age increases.

From the Missouri Agricultural Experiment Station comes a report based on the study of a good many trap-nest records, showing that egg production during any year is 88 per cent. of the preceding year's production when expressed as the number of eggs for each hen. Some of the hens observed had individual records extending over a period of eight years.

THINGS AS THEY ARE

Are you living to-day or in the past?

We hear much complaint about the affairs of the world as we find them to-day. To hear some people talk they apparently must think that our political life is all corrupt, religion no longer a great influence for good, and business strictly on the blink. They laud the good old days when land and labor were cheap and confidently declare that the automobile has been the ruin of the country. They will tell us the sacredness of the home is in the balance because our women wear short skirts or knickers and bob their hair.

Such people are to be pitied. The attitude they choose to take is both humorous and tragic. They are mentally lazy. Their hindsight is all the sight they have. They refuse to look intelligently at the present or with confidence into the future. The reason we hear so much about "those good old days," is because we have lived through them and understand them. Especially do we remember the good things about them. It takes little mental effort to see what has been. If those same conditions were with us now we would know just what would be best to do. We could quickly become rich.

It is not given to us humans, however, to control time. We cannot go back and live the years over. Neither can we go ahead and foretell what the future holds. But we are always sure of the present day. It is the only day that is really worth anything to us and it is always full of opportunity. It is the man who lives his life to the fullest each day as he comes to it that gets the most out of life and that gives us the most to others.

The business man who does not grapple with conditions as they present themselves each day soon goes by the board; the best preachers we ever knew found a way to apply their truths to present day life; farmers today who cannot or will not apply up-to-date methods and practices are doomed.

In spite of high taxes and bobbed hair, the country we live in to-day is the richest, the happiest, and the freest of any major country on earth. There is more real life to be found in a good Canadian summer day than some of our forefathers knew in a month. Opportunities in business, in industry or in agriculture are the greatest to-day that any normal period in the world's history has witnessed. Grasping them requires but the application of sound sense and energy to things as they are.

A Good Melon Test.

I have heard so many people exclaim, on my being able to pick out a ripe watermelon by simply thumping or snapping upon its surface. However, it is not so hard, and absolutely nothing mysterious about it. A green melon has a very hollow, loud sound, while his ripe neighbor gives forth a flat dead sound when his sides are thumped.

To make certain that the melon is well ripened, hold said melon balanced on one hand, and rap sharply with the knuckles of your hand. If it is nice and ripe it will quiver and tremble, while if green it will have a tendency to roll on or remain as a stone. No shaking will be felt.

To be sure you know just what I mean by a flat, dead sound, just lean over (drawing up the toes so as to stretch the side leather where it touches the foot. A flat dead sound without any carrying power will result.

Have you ever had any trouble reselling to any parties who have bought melons of you? Quite often one poor melon will kill your come-back trade. One thing a good melon overlook. The person buying will ask, "Is it ripe?" I say, "If it isn't you tell me. I consider no melon sold until it satisfies the consumer."

I never plug a melon I sell. A man would rather cut into his own melon first.

I have people walk right past the other fellow's stand and ask me if I have any of those good melons.

Very many have told me that they have bought so many green melons that they wouldn't buy any more. But, "Guaranteed satisfaction or money back" fetches 'em and—they come back.—J. O. Roberts.

POULTRY.

When the men haul in the alfalfa there will be large quantities of shattered leaves on the racks, and after the mow is emptied the floor will be found covered with them. In the bottom of the cow mangers often there will be a half foot of leaves. All these should be saved to feed the hens, as they are ideal for green. They can be steamed or may be mixed with the mash. Hot water poured over them and allowed to stand for a time, closed, will make them soft and green and the hens will relish them and give eggs for them. If you have no chance to get alfalfa leaves thus, you may cut very young sweet clover or white clover and dry, and it will answer about as well. The lawn clippings from a white clover lawn should be saved.

Actions Tell.

The real way to honor the flag is to obey the laws that are passed under its shadow.