Soils and Crops

Address communications to Agronomist, 73 Adelaide St. West, Toronto

The Advantages and Disadvantages of the Fall Breeding of Mares.

The breeding of mares in the fall is looked upon by many as a last opportunity to get the mare in foal, where for one reason or another she was not bred nor could not be settled earlier in the season. This is but a superficial consideration of the case. There are decided advantages in the regular practice of fall breeding.

The Advantages.

More work for the mare. Much of the dual capacity of the mare for work and increasing her species is lost when she foals in May or June. Under ideal conditions for the foal, she should spend several weeks or the better part of the summer on pasture. On the average farm then, where horse power is limited, the in-foal mare cannot be heavily worked for a short time before she foals or worked at all for some months after. Where, however, she does not foal until late fall, her services are available when they are in urgent demand and she is exerting the other side of her dual capacity, foal rearing, in the winter, when on most farms she would be idle or comparatively idle in any case. An animal that can work at two such fundamentally necessary jobs as the above and accommodate her work to the seasonal demands so effectively is indeed almost a perfect power plant.

Stronger foals at birth. What, in general, is the fundamental cause of weak foals? Invariably lack of exercise or the too heavy feeding of grain to the mare in the winter. In this connection, "exercise" does not necessarily mean standing outside on the lee side of a straw stack. Exercise of the best kind is derived from work judiciously given, where plenty of fresh air not only is, but must be, not only drawn but forced through the lungs and where the scavenging or cleansing organs of the body function at highest efficiency; and the foetus being an integral part of the mare is similarly benefited by this insured cleansing.

The foregoing explains the fact that there is a higher percentage of strong foals in fall. Undoubtedly it also explains, in a more obscure way, the fact that there is a remarkably low percentage of joint-ill cases in foals coming at this time of the year.

Gives the foal a better chance for the first year. The fall born foal is usually an active individual at birth. As a rule it can get considerable exercise on pasture during October and November, on fine days. It does not suffer from heat, or from having to follow a hungry mare over a bare pasture. The flies that render the life of the foal almost unendurable in summer are gone.

There is no healthier environment for a strong, shaggy-coated foal than the barn-yard in winter for a few hours each day, particularly where there is a shed or shelter; this and a box stall, preferably well ventilated, make conditions for healthy and rapid growth, other things being equal. Finally, the foal is weaned from his mother and faces the more trying summer conditions in a much different condition from that of his spring-born brother.

The Disadvantages.

Stallions not always available. Unless there is a stallion on the farm or owned near by, it is often impossible to breed a mare out of the regular season, when stallions are on the road, standing for service, or leased to associations.

Some mares difficult to breed. Certain mares will be found almost impossible to breed outside the natural season. While this is a decided difficulty, the fact remains that in many cases it is one of theory only, existing in the mind of the owner and not troubling the mare at all.

In general, this practice of fall breeding of mares is to be recommended. The suggestion of a trial would be in order where the necessary conditions are available, by breeding one mare this fall for foaling next fall any time from September to December. —Geo. B. Rothwell, Dominion Animal Husbandman.

Autumn Care of Sheep.

Next year's profits from the flock depends largely on the care during the autumn. The lambs must be kept growing, and the breeding stock must be thrifty. Ewes in poor condition in the breeding season will usually bring single lambs and have a small milk flow. On the other hand, fat ewes are usually difficult to get in lamb and often give trouble in lambing. To give efficient service, the ram should be in a good thrifty condition.

The flock should be carefully culled in the fall. Old ewes, ewes with defective teeth or damaged udders, and all ewes which have shown themselves indifferent breeders or poor mothers should be discarded. To replace those discarded, the best ewe lambs should be kept, and because of the tendency for like to produce like, preference should be given to twin lambs and to lambs from ewes which have proved themselves good breeders and mothers. The ram used with the flock should be the best obtainable, and both ram and ewes should be fed liberally so that they will be in thrifty condition at the time of breeding.

The lambs should be weaned early in August. This gives the ewe a chance to rest before the breeding season. After the lambs have been weaned the ewes should be put on poor pasture for a few days to dry up the milk flow. After that they should be put on a pasture that will keep them rather under good store condition. Three weeks before breeding, or about the 10th of October, the ewes should be flushed. This may be done by turning them into a good clover aftermath and feeding half a pound of grain per day to each ewe. If treated in this manner the ewes will be just passing good store condition when bred. If the ewes are treated in this way they will breed regularly, and have a larger percentage of twins and a shorter lambing period next spring.

The ram should be taken from the flock in August and put in a fair pasture. About the first of October he should be given a grain ration of about one pound of grain, preferably oats, each day. The ewes should have their tails clipped before putting the ram with them. The ram should be marked with red ochre on the breast so that records can be kept of the sheep which are bred. During the breeding season the ram should get a liberal grain ration to keep him in good thrifty condition.

After the breeding season the ewes do not require grain until three weeks before lambing, if good clover hay and roots are fed.

The destruction of ticks and lice, by dipping the sheep, must by no means be forgotten. This should be done during the warmer weather of early fall. For ticks one thorough dipping will be required; for lice at least two must be given at ten-day intervals. There are several good dips available. The Canadian Co-operative Sheep Breeders Association is an excellent source of supply for these and for all sheep requisites.

The lambs when weaned should be put on a good pasture, preferably clover. This should be supplemented by some green feed such as rape, and a grain ration of a quarter of a pound of grain per day. It is good practice to feed the young lambs liberally as they make their most economical gains when young, and a lamb that has been checked never does as well as one which has been kept growing.

Success with sheep means careful weeding, breeding and feeding, and at no time is this more important than in the fall.

Some Recent Investigations on Poisonous Plants.

Since the publication in 1920 of Bulletin No. 39, Second Series, by Miss F. Fyles, on "Principal Poisonous Plants of Canada," some further investigations have been made on various other species.

Crab-grass or Finger-grass (panicum sanguinale L.) is an annual plant which has been introduced from Europe and now occurs in Eastern Canada and also in the Priarie Provinces. It has been looked upon with suspicion as the cause of a disease affecting cattle on different farms in Maryland, U.S.A.

Fowl Meadow-grass (Glyceria nervata Trin.) is a perennial species growing on wet ground from Newfoundland to Vancouver Island. It contains hydrocyanic acid and some cases of cattle poisoning have been attributed to it.

Sea Arrow-grass (Triglochin maritima L.) does not belong to the Grass family as the name would imply. It is a perennial plant with a tuft of narrow leaves and a spike of inconspicuous flowers. It occurs in salt marshes on both the Atlantic and Pacific coasts and is found in similar situations on the prairie. It contains a substance which breaks up in the stomach into hydrocyanic acid gas. It is poisonous both to sheep and cattle and is far more dangerous when cut and dried as hay.

Common St. John's Wort (Hypericum perforatum L.) is a perennial plant with opposite leaves and showy yellow flowers. It is a native of Europe but has been introduced into Eastern Canada and British Columbia. Observations made on this plant in New South Wales, Australia, when in flower, have shown that it is injurious to sheep and cattle.

Investigations made on certain trees have shown that they possess more or less poisonous properties. The Western Choke-cherry (Prunus demissa Nutt.) occurs in Alberta and British Columbia. It contains a substance which gives rise to hydrocyanic acid. The leaves of species of Oak (Quercus) may prove fatal if eaten exclusively for sixteen to thirty-five days.

Henbit (Lamium amplexicaule L.) is an anual plant with opposite leaves and reddish-purple flowers. It has been introduced from Europe and has been found in Eastern Canada and in British Columbia. It is said to produce staggers in sheep in New South Wales, Australia.

There is also a case on record of cows having died after eating green potato tops.—J. Adams, Botanist.

A swarm of bees in July is not worth a fly.—Old Proverb.

The Largest Horse Farm East of Manitoba.

It is not generally known that the most important horse breeding establishment east of Manitoba is situated at St. Joachim, County of Montmorency, Province of Quebec. This farm was started by the united efforts of the Dominion Department of Agriculture, the Quebec Department of Agriculture, and the French-Canadian Horse Breeders' Association. The work is being carried on by the first-named and is under the direct supervision of Mr. Gus Langelier who is also Superintendent of the Dominion Experimental Station, Cap Rouge, Que. There are at present, on the Horse-Farm, over ninety horses, all pure-bred French-Canadians; an idea of the scale on which breeding operations are conducted can be had when it is known that twenty-two mares have youngsters this year, while thirty-four are due to foal in 1923.

It is fully admitted that part of the work is to improve French-Canadian horses, but it is also clear that most of the problems of horse breeding, feeding, housing, and management can be investigated as well with this breed as with any other. These problems are quite numerous; inbreeding, close, in line, and outcrossing; in feeding roughages, concentrates, pastures; in housing, the big special barn, part of the cattle barn partitioned off, cheap single-boarded shelters; in management, work or no work for breeding animals, prevention of diseases in youngsters, raising autumn colts. These in themselves show the advisability of having started such a farm.

What will be the future of the place? From an investigational point of view it is assured, as even a quarter of a century is not near long enough to solve many of the problems. As to the effects of any improvement of the French-Canadian horse accomplished thereby and the scope of the distribution of improved breeding stock, the future of that enterprise is really in the hands of the farmers of the Province of Quebec. If they show enough interest, no doubt French-Canadian horses will continue to be bred at St. Joachim; but if it is found out, which is improbable, that French-Canadian stallions and breeding stock are not in demand, then it will surely be in order to look into the question of using another breed for the experimental work at St. Joachim.

In the meantime, old Quebec can boast of having the most important horse breeding establishment in Eastern Canada.

Fruit and Vegetable Pests Numerous.

The Entomological Branch of the Dominion Department of Agriculture, dealing with the insect conditions in June, report the grape leaf hopper particularly active in the Niagara district; the tent caterpillar especially numerous in the Maritime provinces and fairly so throughout Canada; the Bud moth unusually abundant in Nova Scotia, Ontario and British Columbia; the gooseberry borer busy in southern Quebec; the measuring worm giving trouble in British Columbia orchards; the currant sawfly and spanworm heard from in Quebec and Ontario; the strawberry root worm causing injury in southern Ontario; the strawberry weevil showing vitality in the Maritime provinces and the strawberry root weevil (a different species) in British Columbia. Successful efforts are being made in southern Ontario to check the activities of the rose chafer, but the raspberry leaf-roller is unusually prevalent in southern Ontario, where the San Jose scale is also in evidence. The canker worm is also noted in certain sections of Ontario. As regards vegetables, cutworms are reported more numerous than usual; flea beetles are particularly injurious on potatoes, turnips, tomatoes, etc., and the onion maggot is exceptionally active in parts of Ontario, Quebec and British Columbia.

The Passion Play.

The Passion Play, which was resumed this year after having been omitted since 1910, goes back at least to the sixteenth century and is rather a development than a creation. As presented at Oberammergau, it is in effect an open-air play, for, although the auditorium is covered, the stage is open, with a background of sky and forest-covered hills. The outdoor setting, the songs of birds, the trees swaying in the wind, give the scene an air of reality that is most affecting. On one occasion a thunderstorm came up during the crucifixion scene, and to many of the spectators the black clouds and the lightning were more realistic than was pleasant.

To sharpen dull files, put them in a dilute solution of sulphuric acid and leave them there till they are eaten deep enough. Use twenty-four parts of water to one part of acid.

Hired Hand or Partner?

By Russell Adams

To be strictly candid, I am lazy. If I have a problem to solve, I look around until I locate a man who has solved it to his entire satisfaction—then I take advantage of his experience.

That's why I spent last Sunday visiting with Tom Ewing, for Tom had solved the farm-help problem as satisfactorily as any man I know of.

"It's as easy to keep a good man as it is to keep a good team, and just as profitable," was Tom's answer to my leading question.

"In the old days I hired and fired pretty regularly; I'd hire anybody who happened to drop in, and if he didn't suit me he didn't last long.

"In those days, practically all farm labor belonged to 'The Rambling Rovers'; single men roaming from province to province across the country. Very seldom would you see a married man hunting work on a farm, for the reason that land was cheap and he started out on a place of his own, but to-day it is quite different.

"For the last five years I have employed one man (a married man by the way) steadily and, taking everything into consideration, he is the most profitable man I have ever employed.

"Right at the beginning I thought I could not afford to hire a married man, pay him living wages, furnish him a house, a cow, fuel, etc., but I have learned better; he is the cheapest man I have ever hired.

"If you hire the right man, the longer he stays with you the more valuable he becomes. Fred knows as much about my system of farming as I do, and such is far from being the truth when you hire a man to-day and let him go next week or next month. A man must know your system, your stock, your farm and your plans before he can give you his best service.

"Married help is preferable to single help, for one reason at least; cooking and washing for help has long been the bug in the butter of farm women; but many farmers believe it is cheaper to take single help into their homes than it is to employ married men, furnish them a house, fuel, etc., and possibly pay higher wages, but that is a mistaken idea from start to finish. Add $15 a month to the wages demanded by the single man, and you can hire a married man who will stay with you indefinitely. The best part of it is, that he is always on the job when needed. Single help is prone to rush away Saturday afternoon and not show up until Monday morning, leaving all the chores for the boss to do, but when married help is employed it is different; his interests are where you wish them to be—on the farm.

"How do I find work for my man to do the year around?' That's the easiest question to answer that I have been asked in many a day. We have our general work to do, about the same as on any other 160-acre farm, our fencing, hauling, marketing and road work; besides, we do considerable hauling for others. A year ago last fall I bought a two-and-a-half ton farm motor-truck, which I consider one of the best investments I have ever made. We are only four miles from a railroad station, but the motor-truck enables one man to do the work of four men, four wagons and eight horses, and has reduced my hauling costs more than a hundred per cent. In addition it has opened up good markets heretofore closed to us. The motor-truck has much to do with the contentment of my man, as you will understand when I tell you that last spring I told Fred that he could have all he raised on that little three-cornered patch you probably noticed between the river and the corn-field, below the bridge. That is rich soil, but unprofitable for corn on account of the short rows and much turning in cultivating. He planted the patch to tomatoes and potatoes and marketed the stuff in the city, twenty-five miles away, while hauling for me. Off a scant two acres of ground he sold almost $300 worth of vegetables, and he was as tickled as a boy with his first gun.

"If Fred had been forced to sell his truck patch products at our shipping station, it is doubtful whether he would have received enough for them to pay him for his trouble; but by taking them to the city, when the demand was strong, he cleared up a splendid profit on his spare time work.

" 'What should a person pay his farm help?' Why, pay him what he is worth; some men are worth $40 a month, some $50, while there are others who would be overpaid if they received a dollar a week. Worthless help has ruined more good teams and sent more machinery to the junk-pile than all other causes combined. When we haul for others, we use a scale of charges based on ton-mile haul, and Fred gets 20 per cent. of the net profit realized on each haul. This gives him a little extra income and at the same time causes him to take an added interest in the work and the best of care of the truck; he feels that our interests are the same, he realizes that in a way we are partners, and when you get a man to thinking along that line, you have solved the farm labor problem to your mutual satisfaction."

"Tom, how do you get time to keep the road along your place in such good shape?—every time I come this way it reminds me of a paved street," I asked.

"Oh, that's easy; when Fred and I return from a trip to town, if we have a spare half-hour, we hitch the truck to the grader and fix the road a bit. We plan on working a full ten-hour day, and every minute has to count. 'Keeping everlastingly at it brings success, you know," he grinned in reply.

As Tom pays income tax and enjoys the good things of life along with his family, I believe he is correct.

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THE SUNDAY SCHOOL LESSON

JULY 30.

The First Return from Exile, Jer. 29: 10; Ezra 1: 1-8, 11. Golden Text—We know that to them that love God all things work together for good. Rom. 8: 28 (Rev. Ver.)

Lesson Foreword—Under the Babylonian regime the Jewish exiles in Babylonia were allowed considerable freedom but they were not allowed to return home. They dwelt in colonies, had their own houses and engaged in trade and agriculture. When in B.C. 539 the Babylonian Empire gave way to the Persian Empire the Jewish exiles had still more liberty. It was in accordance with their general policy to the subjugated peoples within their empire, that the Persians permitted the Jewish exiles to return to Palestine.

I. The Prophecy, Jer. ch. 29: 10.

This verse is from a letter which Jeremiah wrote to the exiles in Babylon, v. 1. His purpose in writing them was to advise them to make themselves at home in Babylon and not to revolt against their masters, vs. 4-7. **After seventy years**; here probably a round number and not any definite length of time. The exiles left Jerusalem in B.C. 537 and B.C. 586 and their first return was about B.C. 536. **I will visit you.** Jeremiah, who before the exile had threatened the people with God's punishment for their sins, now changed his note and proclaimed God's mercy to them.

II. The Decree, Ezra 1: 1-4.

V. 1. **The first year of Cyprus.** In B.C. 559, Cyrus commenced his career as king of Elam, an insignificant province east of Babylon. Then he conquered the Median Empire and later the Persian Empire. Finally in B.C. 539 he captured Babylon. The decree of Cyrus would be issued in his first year after the capture of Babylon, that is in B.C. 539-538. **The word of the Lord. . . . fulfilled.** God had inspired Jeremiah to utter this prophecy (ch. 29: 10) and then had led Cyrus to carry it out. **The Lord stirred up**, etc. It was the view of the Hebrew prophets that all the events on the plain of history were originated and directed by God. (See Isa. 44: 28 and 45: 1-13.)

V. 2. Cyrus here avows his reason for making the decree. It was because he derived his rule from God and because God had commanded him to rebuild the temple in Jerusalem.

V. 3. The decree of Cyrus was proclaimed throughout all the Persian realms and gave permission to the Jews, wherever they were to be found, to return to their native land. **His God be with him**; literally, "May God be with him." It was an ancient form of blessing like our farewell: "God be with you."

V. 4. **Whosoever remaineth**, etc. Ryle paraphrases his rather ambiguous passage thus: "In any place where survivors of the Jewish captivity are to be found sojourning, there let the natives of the place, the non-Israelite neighbors, render them all assistance." Cyrus commanded that local assistance should be provided for those Jews who wished to return to Palestine. The assistance was to be of two sorts: (1) **Silver and gold**, etc.; necessaries for their journey and their new home (2) **Freewill offerings**; gifts for the temple of Jehovah which was to be rebuilt.

III. The Return, 5-8, 11.

V. 5. **The chief of the fathers**, etc.; the chiefs or elders of the leading families in the tribes of Judah and Benjamin who had been carried captive. This was a return of the two tribes here mentioned and not of the ten tribes who were exiled in B.C. 721. (2) **Priests.** (3) **Levites**; a lower order of priests. (4) **With all them**; who were not included in the three preceding classes.

V. 6. **All . . that were about them**; their heathen neighbors and the Jews who did not wish to return. This refers to Cyrus' decree, v. 4. **Strengthened their hands.** This Hebrew expression means, "They encouraged them or rendered them assistance" by giving them the gifts mentioned. For the gifts see the comment on v. 4.

V. 7. Ryle says, "The Jews were assisted not only by private individuals, their neighbors, but by the example of the king himself." **The vessels of the house**, etc. On two occasions these had been taken as booty from the Jerusalem temple by Nebuchadnezzar—at the first capture of Jerusalem in B.C. 597 (2 Kings 24:13) and at the final destruction of Jerusalem in B.C. 586 (2 Kings 25: 14-15). **In the house of his gods.** The vessels taken from the Jerusalem temple were set up as trophies of victory in the heathen temples of Babylon.

V. 8. Cyrus handed over these vessels to one of his officials who listed them and then restored them to the returning Jews. **Misredath.** This is a familiar proper name among the Persians. It recalls the great Persian sun-god, Mithras. The Greek form of the word was Mithradates. The official mentioned here was "the king's Privy Purse, the bearer or dispenser of the royal treasure." **Sheshbazzar.** In all likelihood this was another name for Zerubbabel, a prince of the house of David and the leader of the returning exiles. (See 3: 2, 8; 4: 2-3. Hag. 1: 1; Zech. 4: 6.)

V. 11. The expedition, well equipped with valuables both for the journey and for their arrival in Palestine, set off with Sheshbazzar or Zerubbabel at the head. The journey would require several months. In all likelihood their route would lie north and northwest along the Euphrates up to the fords of the Euphrates at Carchemish, and the south through Syria and Samaria.

Application.

Cyrus assumed that if the Jews were really anxious for the restoration of the Temple they would be willing to make some sacrifice. Some could go back to Jerusalem and face the difficulties, and those who could not return could help with contributions of silver and free-will offerings. An Ontario man, much interested in the establishment of churches in growing communities, made liberal contributions, but stipulated that the local church raise a similar amount. Cyrus was "stirred up," but he took it for granted that the people were also willing to make sacrifices.

Paul's entrance into Rome was not what at one time he desired it should be, yet he recognized that God's Providence had been over him in a remarkable manner. In a letter written from Rome to his friends in Philippi, he says: "I would ye should understand, brethren, that the things which happened unto me have fallen out rather unto the furtherance of the gospel." Many centuries before this, Joseph also bore testimony to the wonderful way in which God had taken care of him so that even his afflictions had worked out for good. (See Gen. 50: 20.)

In every family there is a good deal of forethought going on about which the children know nothing. Fond parents are always looking ahead and making plans for the little folks, and this goes on for months and years though the children are scarcely conscious of it. There is an enormous difference between the knowledge and experience of the parents and that of the children, but it is as nothing compared to the vast gulf between us and God. If the children cannot understand our plans, how can we expect to understand God's providence over us.

Plow early for fall wheat.

During the first three months of the current year 4,345,400 pounds of halibut was taken in Canada, of a value of $425,531. Last year in the same period 5,300,000 pounds was taken valued at $607,190.