

FOR FARMERS' STOCK BREEDERS AND CARDE NERS

NEWSY NOTES

BY AGRICOLA

SUNSHINE AND SHADOW

The astronomers, who, according to the announcer, had been waiting their nails on that small island in the South Seas, were cheered by the clouds dispersing, and allowing a perfect view of the solar eclipse of June 8th. I think the period of totality at that point was three minutes and seconds; there were other points where the totality was of seven minutes duration but these were in all probability out at sea.

The Astronomer Royal, with true Celtic eloquence, tells us that "the Earth and the Moon, the planets and their satellites and the comets, are the children of the Sun. They are all under his tutelage, constrained by him to follow their allotted courses, and dependent upon him for such light and heat as they receive." Little wonder that in early days mankind was apt to stress the life-giving qualities of the "Sun-god."

Eclipses, few and short as they are, have within the last twenty or thirty years, done much to add to our knowledge of this, our nearest star. We learn that the sun is made up of several layers, "like an onion," one writer says. The outermost is the "corona," a bright aureole, so much weaker than sunlight, however, that it is never seen till a total eclipse cuts off the light. It would seem that the sun is surrounded by a very thin atmosphere about 2,000,000 miles deep, and the corona is mainly sunlight diffused through the denser part of this atmosphere. It has been observed that the corona is greater (wider) and more uniform at sun-spot maximum, while at the minimum it is narrower and irregular in outline. It may be 350,000 miles in depth.

Within the corona lies the "chromosphere," a crimson sea of burning hydrogen, about 5,000 miles deep, say the men of science. It is agitated by tempests "to which our ears as zebrulys." From time to time red tongues leap up from the chromosphere to a height of anything from 10,000 to over 300,000 miles. Scientists call them "prominences" and record that on the eclipse of May 29, 1919, such a cloud of burning gas rose to a height of more than 500,000 miles above the surface of the sun before being blown away into outer space.

Here a question arises: the sun is supposed to have a tremendous gravitational pull, at least twenty-

seven times that of the earth, should the hydrogen leap up and out at all? Some of the prominences have lasted more than a month; what holds them up? Sir James Jeans tells us the answer: it is the pressure exerted by radiation, he says. It is calculated that the pressure of the sunlight falling on the whole illuminated hemisphere of the earth, amounts to only 75,000 tons, and is not noticeable.

At the point of origin—the sun—the effect is far more formidable—"enough to fling out great fantastic wreaths of hydrogen, despite the pull of gravitation." (It may not be amiss here to mention another effect of the solar radiation. Fifty years ago it was the common belief that the tail of a comet streamed out in its wake as it rushed along. When photography came in, it was seen that the comet's tail was at an angle to its course, sometimes at a right angle; and this is due to the pressure of the solar radiation, blowing the tail crosswise, as the comet goes round the sun.)

Inside of the scarlet chromosphere, is the "reversing layer," about 1,000 miles thick. Its name is derived from certain effects on the solar spectrum, which we need not consider here. Under this is the "photosphere" (a layer of incandescent cloud of unknown thickness—to us the real sun). It is in the photosphere that the sunspots take their rise.

Sir Arthur Eddington thinks that the surface temperature of the sun is 10,000 degrees F., and at the centre 70,000,000 degrees; Professor Spencer Jones the Astronomer Royal accepts these calculations, so nothing remains for us but to agree.

A QUESTION IN GRAMMAR

As the years pass much of the learning gained in school is likely to be lost again, driven out by pressure of other interests; and part again is more or less out-moded. Hence the importance of that most valuable and stimulating feature of The Saturday Guardian the "Educational Horizon," where the answers to correspondents provide an adult education for ancients like myself.

I have often wished for an authoritative pronouncement on the "Verb Infinitive" as the old grammars called it, that is, the infinitive mood of the verb. We were taught that it only named the action and for centuries was regarded as equivalent to a noun. In the sentence "He likes to write," one sees at once that the object of his liking is "writing." An infinitive might have an object, said my schoolmaster, "He likes to write letters"; but it could not have a subject or it would be exactly like a finite verb. I think I have heard that modern grammarians do not subscribe to the last rule, which, however, seems not unreasonable.

What about the sentence suggested by the first article of these Notes: "The astronomer saw the sun emerge from the clouds?"

Sun is the object of saw, and according to some would also be nominative to emerge. As emerge is a distinguished infinitive (with the particle "to" omitted) this latter usage would not have been permitted in the school which I attended. The astronomer saw (1) the sun and (2) the emergence; hence we should have filled in our analysis with two objects.

I remember an instance where the infinitive was practically an adverb: "It was wonderful to see." Here it modifies the adjective "wonderful."

NEW TO OUR FLORA

By the courtesy of Professor R. R. Hurst of the Laboratory of Plant Pathology, I have been permitted to examine and place on record two plants which are new to the Island flora. The first is a member of the Labiate family and is known as Ajuga reptans L. The Bugle Weed. It is a perennial "with copious creeping stolons" and has blue flowers in spikes. A native of Europe, it has found its way into the fields and gardens of Canada and the Northern United States. This particular specimen was growing in or near Charlottetown.

The second belongs to the

ANIMAL HUSBANDRY

SOME INJURIOUS INSECTS

The Bud Moth

In the early spring as the buds are swelling and beginning to show green at the tips, a small cinnamon brown caterpillar will often be found boring into them. A careful examination of the twigs may reveal the presence of the tiny brown, silk-lined cases from which the larvae have emerged. They do not all come out at once. In fact the total period may extend over a week or more, but in general, it will be found to occur during the first weeks of May, or when the bud tips are beginning to turn green. In a short time they will emerge their particles of brownish excrement will be thrown out at the tip of the bud upon which they are feeding and sometimes a drop of liquid will ooze from the wound. The tender green tips are first consumed, and then boring into the centre of the cluster, the caterpillar feeds upon the unopened blossoms destroying large numbers of them. In some cases bud moth larvae have been observed boring down through the bud for a short distance through the heart of the tender shoot so that the tips withers, or they may bore into the side of a tender leaf-bearing shoot likewise causing the death of the tip. In other cases they have been known to bore directly through the base of a fruit bud thus destroying it entirely. With the unfolding of the blossoms the larvae will be found feeding upon the expanding leaves with a silken web as more food is required. At this period of its life the young larvae lives within a tube made from a wilted leaf, the stalk of which was first partly severed, rolled up, and loosely lined with silk. Within this tube the caterpillar lives for six or seven weeks, completing its growth and transforming to a shiny brown pupae within its nest sometime during the last week in June and the first three weeks of July. In this stage it remains about seventeen days, emerging as an ashy-grey moth with a light brown band across the front wings early in June until early in August. The mature caterpillar is about half an inch in length and the moth has a wing expanse of about 3-5 of an inch.

Within two to four days the moths begin to lay their eggs, one in a place on the underside of the leaves. The eggs are very small and scale-like in appearance. They hatch in thirteen days and begin to feed upon the leaf, but in a few hours they construct an elongate tubular shelter of silk open at both ends, near a mid-rib or larger vein while a thin, flat web of silk covers the full operations, which is extended as needs require. Oft-times, where a leaf touches an apple the two will be webbed closely together, the result being a series of small, round excisions on the apple, which in time injure and lower it in grade. Similar injury is sometimes noted where two apples come together.

It will be seen therefore that bud-moth injury is of two main types, one being to the buds and blossoms in the spring thus injuring the "set" of fruit and one to the apples in late summer and fall injuring the appearance of the fruit.

At the approach of cold weather in the fall or any time between the last week in August and the last week in October, the young caterpillars will be preparing to go into winter quarters. They do this by first seeking out a protected location on the twigs such as a crack, unevenness or crevice, or even under a bud scale, and there spin about themselves a delicate case, moulding and building into the structure their old cast off skin during the process. The small brown winter cases are very inconspicuous.

(to be Continued)

AGRICULTURIST

Cruciferae or Mustard family, and is Early Winter Cress, Barbarea verna (Mill.) Asch. We already have B. vulgaris R.B. and B. stricta Andr. on our list, and the new plant greatly resembles both in its flowers, but can easily be distinguished by the very thick pedicels (stalks) to the long seed-pods. Gray says that B. verna is sometimes cultivated as a winter salad, under the name of Scurvy Grass. This is another instance of the uncertainty of popular names for the botanist applies the term Scurvy Grass to an entirely different plant. I have known these Barbareas to have been introduced amongst timothy and clover seed.

In 1925 Dr. W. L. Holman, of the University of Toronto, found an Aquilegia (or Columbine) growing wild in the woods near the golf course at Summerside. It was not possible, at that time, to distinguish the species, as only the dried seed-pods were in evidence. One of them happened to contain a single seed, which was planted in the nursery bed, with a special marker. From the single plant thus raised and now in flower it is seen that it is Aquilegia vulgaris L., which, although a "garden escape," must be allowed a place in our list. Since the publication of the check-list of the Island plants in 1933, thirty-one new species have been discovered, bringing the total number up to 625 species and varieties.



WHAT IS HOME WITHOUT A GARDEN?

The greatest fun in vegetable gardening is to grow the uncommon crops not offered in the market. Chervil, which resembles parsley, has a flavor which many favor. Upland cress and corn salad are appetizing additions to the salad list. Hamburg rooted parsley is a delicious ingredient of stews. Celery, or rooted celery, when cooked and served in salads, imparts a delicious celery flavor.

Popcorn is easy to grow. Horse-radish sets are good suggestions for next winter. Tarragon plants for next winter. Tarragon plants will provide a crop of leaves which will transform vinegar in which they are steeped.

These are only a few of the out-of-the-ordinary vegetables that you can grow with ease. Look over the seed list again, and pick out a few new vegetables to add variety to your garden.

GET RID OF GARDEN ENEMIES

The gardener's medicine chest is amazingly simple compared with the catalog of human remedies. Little is known about controlling plant diseases and the weapons we wield against insects have been in most cases used for a long time. The newest insecticide is a vegetable extract whose secret was obtained from a tribe of savages.

The gardener who is confused about sprays and dusts may survey here in a few minutes the whole field and acquire sufficient knowledge to enable him to meet correctly any problem which may arise. Meet it, that is, as well as anyone can. Sprays and dusts may be divided into three classes:

- 1. Fungicides, which may be used to kill insects, but destroy fungi, mildews and similar conditions most of which are usually referred to as plant diseases.
2. Contact poisons, which kill insects with which they come in contact when dusted or sprayed on plants.
3. Stomach poisons, which remain on leaf tissues and poison insects which eat the leaves.

Fungicides are used against various rusts, wilts and similar diseases which attack trees shrubs and garden plants. Bordeaux mixture is the most widely used in the garden. It is composed of quick lime and copper sulphate. Dusting sulphur, similar to flowers of sulphur but more finely ground, has come into favor for black spot on roses and garden mildews. The newest fungicide is really an old one, corrosive sublimate, or mercuric chloride. It is the base of most preparations used to cure brown patch on bent greens.

CaSomet, the old-fashioned household remedy, which is a mercury compound somewhat similar to sublimate, is used for the same purposes and sold under various trade names. Lime-sulphur is used as a fungicide on fruit trees and does double duty as a contact insecticide to kill scale insects and in dilute form to kill red spider in the summer.

Contact insecticides are usually prepared from nicotine, pyrethrum, rotenone or a soluble oil which will make an emulsion with water. Sulphur and lime sulphur are used chiefly against scale insects and red spider. Nicotine is a deadly poison to animals and most effective against aphids (plant lice).

The latest contact materials in sprays and dusts are merely new forms of old materials which kill insects, while doing no harm to animals. They are the powdered leaves of a wild species of pyrethrum and rotenone, the extract of derris root which savages use to kill fish. Both substances are offered in various dusts and sprays under trade names. Rotenone has the advantage of being a stomach poison as well as a contact poison.

Arsenic is the base of most insecticides used to kill insects which eat leaf tissues. As arsenate of lead it remains on the leaves after spraying for the longest time. For dusting in the garden calcium arsenate is preferred by many. Paris green is used in some cases though much less than in former years.

Arsenic must always be applied with caution, and whenever it is applied to portions of a plant which are subsequently eaten it should be thoroughly washed away. Rotenone, which is harmless to animals and fish, is a contact stomach poison as well as a contact poison. Its use should be followed by instructions carefully.

The many friends of George E. Brown, noted silver fox breeder, now residing in Charlottetown, will regret to learn that he is still confined to his bed. This is a new state of affairs for Mr. Brown, who has always enjoyed the best of health. Let us hope that he will soon be back with his foxes again and ready this fall to take his place at the show ring table with his celebrated strain of foxes. The most noted fox in recent years from a show standpoint is without doubt Bonnieview 42B, bred by George E. because of the performances of the progeny and descendants in the show ring.

"The Karakul Breeder" is the title of an interesting agricultural publication launched in Chicago recently and devoted exclusively to the Karakul sheep industry. The Editor, Mr. P. V. Ewing, states that Karakul breeding is developing rapidly in the United States. Instead of an anticipated two or three hundred Karakul breeders, which was his expectation when he started the journal, he now finds that there are close to 1,000 breeders, some of them with very large flocks.

The championship prize for the best pelt at the Fromm Bros. last sale was won by George E. Miller of France, Minna, who has developed the largest silver fox ranch in that state. Mr. Miller was formerly an instructor in Biology in a Dakota college, but in 1924 purchased a pair of silver foxes for \$3,000, and from that pair and a few others purchased, has built up his entire herd. Last year his farm produced approximately 1,000 silver foxes.

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TIMELY NOTES ON TOPICS CONNECTED WITH Silver Fox Farming

The cover page of the June American Fur Breeder is very attractive, particularly the cut of an extra pale silver fox with black brush and large white tip. Below is this wording—"With mounting production costs and declining prices for dark color phases, the fox breeder who cannot produce silver pelts is in for a tough time of it." The editorial page has a cut showing the proportion of types and relative quantities of silver foxes produced in the United States as a graphic illustration to the breeders of the necessity of producing more silvers and less of the lower priced darks and blacks.

The figures show that 20 per cent of the entire production of fox pelts last season were full silvers, 30 per cent medium and half silvers, 50 per cent dark medials and blacks. Says the editorial:—"The breeders of the United States have been utterly blind to the fact that for the past six years there has been a very definite change in silver fox fashions. They have failed to keep step with the trend of styles and with new methods of fur garment manufacture, and so today we find our fox breeders producing vast quantities of low grade pelts and color phases that sell for prices averages below the cost of production. We find enterprising foreign breeders coming into our markets with increasing quantities of the popular silvery types of skins and competing with us in spite of our 50 per cent tariff. The silver fox breeders of the United States have come to the parting of the ways, and it is high time that they get together and regain control over their industry and organizations."

The Boston Better Business Bureau recently stopped a retail merchant from advertising two-skin silver fox scarfs at \$150. The Bureau found that the scarfs were fashioned from black fox pelts and the white hairs were pointed in.

Dr. D. R. Young of Emo, Manitoba, sold a silver fox pelt at one of the London fur auctions this Spring which netted him over \$180. The highest priced pelt sold on the London auction this year, according to our information, was a two-year-old male, pale silver fox pelt from the ranch of George A. Callbeck, Summerside. Two parties in Summerside who had the privilege of examining it there said that it was one of the finest they had seen in years.

A meeting of the Executive of the Prince Edward Island Silver Fox Breeders and Exhibitors Association was held in Charlottetown on Tuesday evening. Matters in connection with the annual meeting which will be held in the City Hall, Charlottetown, at two p.m., June 29th, were discussed.

The Black Fox Magazine publishes a very interesting article entitled "The Importance of Calcium in the Diet." It gives an analysis of the calcium content of various kinds of milk and the effect of lack of calcium in dogs which were used for experimental purposes. These are extracts:—"The major function of calcium in the animal organism is in the formation of bone and the perfect calcification of same, which is taking second place. Not only does it build bone, but in the matured animal maintains it. So important is calcium that there is not a normal cell in the animal body that does not have it present."

James M. Smythe, Howland, P. E. I. is having a nice sale for his fox spring and fox feed pans. The Vimy Ranch has been equipped with over 1,000 sets of harness and numerous other ranches around Charlottetown have bought in smaller quantities. Mr. Smythe has invented something of real value to the industry and deserves the success which we hope will come to him.

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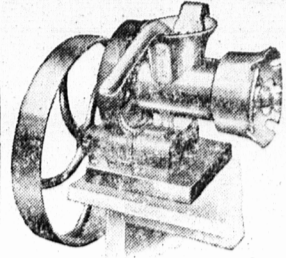
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When the calcium intake of a matured dog is below its equilibrium the animal does not, for some time, show the evidence. The demands of the soft tissues of the bones of the body are so great that the bones of the body are forced to give up their calcium and in time they will become soft. Naturally a deficient calcium intake becomes evident in the growing animal much sooner than in the adult.

One of the first indications, as observed in this laboratory, of a poor intake or absorption, is in the toe nails of the animal. These begin to crack and turn under; there is also noticeable darkening of the color of the nails. It is also evident in the teeth through a pronounced darkening around the gums and a saw-like condition upon the edges. In fact, there are numerous little things that become evident in the animal body which are difficult to explain and which might be due to a low calcium intake.

Commenting on the above I would say that the calcium intake would be watched in every ranch particularly where milk is not used. Milk of course supplies considerable calcium, perhaps quite enough if used in quantity, but the addition of five per cent ground bone to the milk feed would not be a disadvantage but rather an advantage. Where there is no milk used it may be necessary to top up the green bone to seven per cent or more. Some recommend as high as ten per cent, but we have found that that quantity was liable to cause the foxes to bite their tips, not perhaps due to the calcium so much as the rich marrow which forms the centre of the bone. Cod liver oil is an excellent thing to feed along with the bone, particularly the first few months of the young fox's life. The quantity should be small, one teaspoonful is quite enough for six fox pups—ten drops per pup. This may seem an unreasonable small quantity, but it must be remembered that cod liver oil is a very potent remedy. It should be discontinued in August as used after that it is liable to force the guard fur too quickly and cause browning of pelt later on.

Elwyn Ingram, Fur Sales Manager of the Hudson's Bay Company, London, England, accompanied by Michael Lubbock of the Hudson's Bay Company, Winnipeg, arrived here by plane Wednesday evening and were joined by J. C. Donald of the same Company on Thursday evening. Thursday was spent by Messrs. Ingram and Lubbock visiting fur farms near Charlottetown including the McLure and MacKinnon Silver Fox Farms, Ltd. in which the Hudson's Bay Company is largely interested. Friday the party motored to Summerside where they met the managers of the various fur marketing organizations. They were impressed with the beauty and agricultural wealth of our fair Province and also spoke most appreciatively of the Canadian National Hotel where they stopped.

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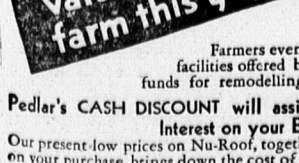


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