

The Farmer's Advocate AND HOME MAGAZINE.

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DOMINION.

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1. THE FARMER'S ADVOCATE AND HOME MAGAZINE is published every Thursday. It is impartial and independent of all cliques and parties, handsomely illustrated with original engravings, and furnishes the most practical, reliable and profitable information for farmers, dairymen, gardeners, stockmen and home-makers, of any publication in Canada.
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of parliamentary candidates, as has been done in one or two instances.

In another column will be found a report of a joint executive meeting of the various forms of organized agriculture in Ontario, led by the United Farmers of Ontario. This meeting was called for the purpose outlined above and a platform drawn up, which must be submitted for final ratification at the annual meetings, to be held in December. The proposition to form a third political party, a farmers' party, has very properly been negatived for the present. The needs of Agriculture and of the farmer, together with the greatest national development, are the basic ideals to be considered and, we take it, the various recommended planks for a farmers' platform were formed with this in view. In order, therefore, that the final decision of the organized farmers may be made wisely in December, it is up to every man whose interest lies with agricultural progress, to consider this tentative program piece by piece, thoughtfully and earnestly. Too far-reaching or revolutionary changes will not stand the pressure of normal times, but changes are due and only such of these should be sought as will stand the test and may be brought about.

Long Winter Evenings Give Opportunity for Study.

BY ALLAN MCDIARMID.

Some very trifling circumstance or story often leaves a deep impression on a person's mind. I recall hearing a friend of mine, who had done a good deal of travelling about the world, telling of a certain family in the country with whom he spent the night. Noticing, during the evening, that none of the family were especially occupied in any way, he asked the lady of the house how the men-folk spent their evenings. "Oh," she replied, "they just weary around till bed-time."

That was a good many years ago, but I have an idea that there are more farmer's homes in this country in which these same conditions still exist than some of us have believed. In these homes neither books, magazines, daily or weekly papers are to be found. Two reasons account for this. First, lack of interest in the outside world, and second, the unwillingness, on the part of the one in control, to spend the money necessary to get these books, magazines and papers. It looks to them too much like wasting their hard-earned dollars. Their idea seems to be to put any surplus cash into land or live stock or something that will help them to make still more money to buy more land and

stock, and so on to the end. The fact that they can't take these things with them when they leave here never seems to occur to them any more than does the idea that they might accumulate something that would be of permanent value and which would be a part of their character for an indefinite time; or for all time, so far as that goes.

Looked at from a certain standpoint this life is mighty short and it's a pity to waste any of it, especially that part that might be given to the development of the mind; the important part of man, because the permanent part.

The winter evenings, particularly among farmers, could be made to be worth more than all the rest of the day put together, if they were used as they might be and as they should be. A good deal can be accomplished in three or four hours, and when this is multiplied by the number of nights from fall till spring it is easy to see what progress we might make along any line that we became interested in.

It's all very well to propose the organization of Debating Societies and Farmer's Clubs and so on, but for the majority of us this form of education and entertainment isn't available. The means of existence for these things don't seem to be found in every community. Anyway, they benefit only the special few that can be induced to take part in the programs, etc., and they, for only the short time that their attention is given to the work. What we need is a regular course of study or reading that will occupy every spare evening that we may have during the course of the winter. It's the only way to get results. Any other method is too haphazard.

There are Correspondence Courses advertised now in almost any subject imaginable, and there is this about them that when one has paid out his good money for them he is apt to persevere with them to the end, to get what he bought, but one can get the same education and discipline at less expense by simply making up his mind to give a certain time to a certain subject every evening, in so far as it is reasonably possible.

It was never intended that we should get all our education at the public school, or at the High School, for that matter. They are only what might be termed a "starter." Our education should continue throughout life. What we got in school simply made it possible for us to begin to take in knowledge. A sort of process of getting our eyes opened. Our teachers did their part. From now on it's up to us. Most of us went to school because we were compelled to by our parents. They wanted us to learn what was possible for us to learn in our younger days so that we wouldn't have to put the time on it later on when we might be doing something of value to humanity as well as for ourselves.

In choosing a subject for study or for reading up, a person should, I suppose, take something in which they are particularly interested, as it makes it that much easier to "get the habit." Later on one can go in for what branches of knowledge they think will be useful. One subject that should be of interest enough to hold us once we got into it, those of us who are making our living on the farm at any rate, is Geology. It takes us back to the very beginning of things, so far as this world is concerned, and brings us up through the ages in which everything was being prepared for the life on earth as we know it, and for human life in particular.

Through the study of Geology we find out just how the different kinds of soil, that we find on our farms, came to be what they are. We are able to read the history, from their appearance, of the very stones that we have to clear off our fields. We know why limestone turns to lime when it is burned, and we discover how it came to pass that our neighbor's land is level and clean while our own is hilly and covered with boulders.

As the old poet said, there are "sermons in stones," but until we have learned the language in which these sermons are printed it is "all Greek" to us.

But it is when we begin to find out the length of time it has taken to bring the things about us to their present state that we get something of the real benefit that a study of Geology has for us. It tells us that this earth was once a mass of white-hot gas that had been thrown off from the central sun in common with the rest of the planets of our Solar System, and that hundreds of millions of years must have passed before it had cooled to an extent that made even the beginnings of land and water possible. Before life could exist other millions of years must have elapsed and then down through the different Geologic ages, each of which has been given its name, our study outlines for us the evolution of life, each step a little higher than the last, until we come to man in his later development and the study of Geology merges into that of History, and we finally find in the present the proof of what we think we have discovered of the past.

As I said, it is from a realization of these things which Geology teaches us that we get its real benefit. Our daily worries seem soon ended when we think of them in connection with the life of our earth, and on the other hand we get an impression of our own importance and value in the scheme of creation, when we realize that it was for man as he is, and for what he may yet become, that all this age-long preparation has been made. It's a sort of a guarantee of something very much worthwhile awaiting us in the future. It's our incentive to unending effort.

Taking it all in all I don't know any study that has a greater reward for us than that of Geology. During the winter evenings that are pretty close at hand now, we should be able to get from it not only pleasure, but all kinds of profit.

Nature's Diary.

A. B. KLUGH M. A.

There are fleas of various kinds—water-fleas, snow-fleas, beach-fleas—but the kind of fleas with which I now wish to deal are simply fleas, without any prefix, those elusive little creatures which have forced themselves upon man's attention for centuries.

At one time fleas were regarded merely as nuisances, now we know that they are more than that, that they are the active distributors of several diseases. The Bubonic Plague, which has been known for centuries, being the Black Death of mediaeval times, which has broken out during the past ten years in various parts of Asia, Africa, Europe, South America and United States, and which during the past eighteen years has caused the death of over seven million people, is transmitted entirely by fleas.

Fleas are parasitic exclusively on warm-blooded animals, with one exception, that of the flea found on an Australian species of snake. A great many species of birds and most mammals have been found to be infested by these parasites. There are about four hundred known species of fleas, some of which occur on several different kinds of animals, while others are confined to one, or at most a few hosts. One species of animal may, on the other hand, have several species of fleas, twenty species having been found on the common rat. Fleas which really belong to one host may live for a time on some other species of animal. The infestation of these temporary hosts is seldom of importance to such a host from the standpoint of direct injury, but may have a vital influence by transmitting disease.

With very rare exceptions adult fleas partake of no other food than the blood of warm-blooded animals. Their mouth-parts are well adapted to piercing the skins of their host and sucking up the blood. The piercing organ consists of three slender parts, a groove along the inner side of two of these, with the third part close by applied, forms a channel through which the salivary fluid is forced into the wound and through which the blood is sucked up. The irritation is caused by the salivary fluid which is injected, the function of this fluid being to cause a rush of blood to the spot.

Fleas pass through four stages in the course of their development—the egg, larva, pupa and adult. The eggs are oval, white or creamy in color and just large enough to be seen with the naked eye. Several eggs are laid daily and a single female continues to lay for some three months. The eggs are not glued to the hairs of the host as is the case with the eggs of lice and some other insects, and consequently fall off the host, frequently in its bed or nest. Within from two to twelve days, depending upon the temperature, the eggs hatch into minute, whitish legless and eyeless maggots. These are not parasitic but move about in the dust and debris their food consisting of partly digested blood voided by adult fleas and particles of organic matter. The duration of the larval period varies greatly with the species, and also with the temperature and food conditions, ranging from 7 to 142 days.

When the larvae have obtained full size they spin cocoons of more or less oval shape, and varying much in the different species in texture. The length of the pupal stage also depends upon the temperature and upon the species under consideration, ranging in the dog flea from 7 to 354 days, in the human flea from 7 to 239 days, and in the rat flea from 8 days to over a year.

The longevity of the adult flea depends upon food, temperature and moisture. Cool, moist weather is most favorable for length of life. When kept unfed the human flea lives some 125 days, but if fed at frequent intervals it lives more than 513 days.

The jumping powers of fleas is usually somewhat exaggerated. The human flea is the strongest jumper and it can leap 13 inches horizontally and 7 3/4 inches vertically.

In controlling fleas there are three things which must be attended to, the destruction of fleas on the hosts, control of the hosts, and the destruction of fleas in their breeding-places.

The most effective method of destroying fleas on animals is to give the animal a thorough bath in a 3 per cent. solution of creolin in water, that is in the proportion of 4 tablespoonfuls of creolin to each gallon of water. The bath should last for ten minutes and the solution should be well worked into the hair with a stiff brush, after which the animal should be washed with warm water and soap. Pyrethrum powder may be used, dusting it well into the fur, but in this case the fleas emerge in a stupefied condition and must be collected and destroyed.

In the control of the host it is important to see that dogs, cats, etc. cannot get underneath dwellings, sheds, etc., where conditions are often ideal for the breeding of fleas, and to eliminate rats, which are one of the main carriers of fleas.

In the destruction of fleas in their breeding-places the first step is to gather up and burn all rubbish and dry animal and vegetable matter. After this has been done the floors should be thoroughly sprinkled with crude petroleum. After the main infestation has thus been got rid of the places may be free from parasites by scattering salt and then thoroughly wetting down.

Fleas may also be destroyed by fumigation, which has the advantage of destroying rats and mice as well. In fumigating, the infested building should be closed up tightly, and four pounds of sulphur weighed out for each 1,000 cubic feet of space. The sulphur should be piled up cone shaped in a pan, which should be placed in a larger pan of water to avoid fire from the heat generated. A depression should be made in the top of the cone of sulphur, a little alcohol poured into it, and a match applied. The building should then be kept closed for twelve hours.