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National Efficiency.

No time in our country's history has brought out the need for individual efficiency more than the crisis we are passing through. Efficiency of both mind and body. The requirements of the war have placed a tremendous load upon the people of Canada and, at the same time, is drawing our best men, those most capable of bearing the load, to the battlefields of France.

But there is another phase to this matter. What of national efficiency? The efficiency of the individual is in a greater or lesser measure wasted unless there is direction and co-ordination of the work of each individual. And we say it bluntly, national efficiency must depend upon the organization and direction of industry in all its phases by an efficient government that recognizes efficiency.

Abhor as we do the aims and the ideals of the present German Government, we must admit the national efficiency of Germany as a nation. Had Germany not built up its present industrial efficiency through governmental organization and direction, she could not have fed her military organization, wonderful as it is, through these years of aggressive war against the civilized world. We are going to crush this cruel German militarism that has challenged the world, but are we going to waste the industrial lesson that Germany has for us? Germany has no useless railway lines. They were all built for a purpose. Her factories are in the midst of raw material—but we will not discuss Germany further; it is as offensive for us to write of things German as it must be to read of them—but we must not lose the lesson of German national efficiency.

What could not Canada do if her whole productive energy was organized and efficiently directed now and after the war? Organized that the finished products may be produced at a cost that will permit them to easily compete in the world's markets and at home with the products of other nations.

We can only progress according to the knowledge of the mass of the people. Our democratic principles will remain at the mercy of the ambitious and selfish politician until education among all classes eliminates our politician as we have known him. At the present time our education is most lax and neglected in matters of economics and taxation. It is time these became a part of our school studies that our boys and girls might get a foundation on which to build a knowledge of economic problems.

Nature's Diary.

A. B. KLUGH, M.A.

A very attractive butterfly is the Great Spangled Fritillary, shown in Fig. 1. This species has the upper surface of the wings light reddish brown, with black markings, while the lower surface of the hind wings bears large silvery spots, which are larger in the female than in the male.

The mature caterpillar of this species is black, the head being blackish, shaded with chestnut behind, and the body bearing six rows of black, branching spines, which are usually marked with orange-red at their base. It hibernates immediately after hatching, and in the spring emerges and feeds on the leaves of violets. The chrysalis is dark brown, mottled with slaty-gray.

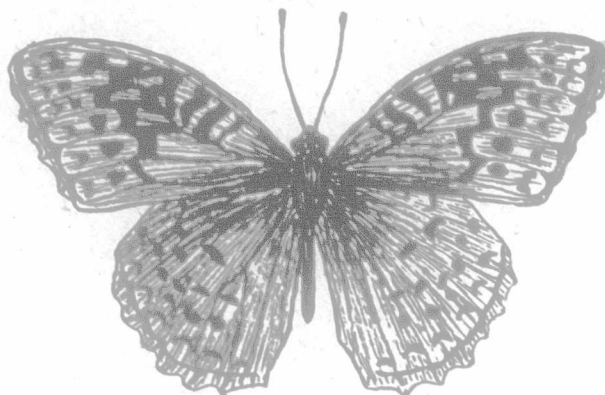


Fig. 1—Great Spangled Fritillary. Male.
(Nearly natural size).

A pretty little species is the Silver-bordered Fritillary, shown in Fig. 2. The wings are reddish-brown with black markings and a heavy black border on the upper surface, and are tipped with silver. On their lower surface are silvery spots. The mature caterpillar is about seven-eighths of an inch in length, dark olive-brown in color, with tubercles armed with needle-shaped projections. The chrysalis is yellowish-brown, spotted with darker brown, some of the spots having the lustre of mother-of-pearl.

The Silver-bordered Fritillary has a wide range, being found from Nova Scotia to Alberta, and south to North Carolina.

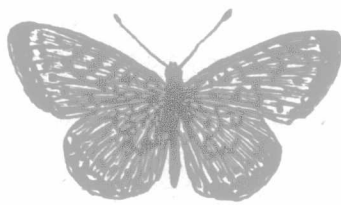


Fig. 2—The Silver-bordered Fritillary.
(Natural size).

We have several very common species of butterflies known as Angle-wings. One of these, the Question-mark, is shown in Fig. 3. This species is reddish-brown above with black blotches and a dusky border to the wings. The name of this species is derived from the whitish-shaped marking which appears thus "?" on the under surface of the hind wings. The caterpillar has a red head and black spines, and feeds upon the leaves of the Nettle and Elm. Another Angle-wing which much resembles the Question-mark is the Comma. It differs in being smaller, (from one and three-quarters to two inches in expanse) in having shorter "tails" to

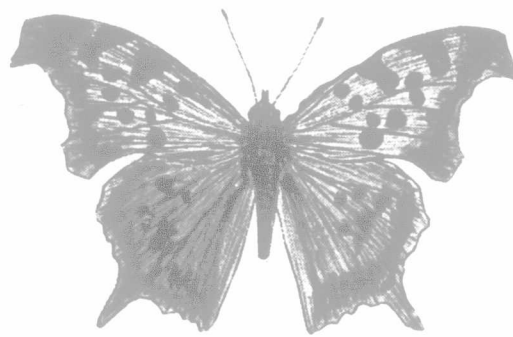


Fig. 3—The Question Mark.
(Natural size).

the wings, and in having a "?" on the underside of the hind wings. Another common Angle-wing is the Faun, which is smaller than the Question-mark, has the wings very deeply indented, and has a row of light dots in the black border of the hind wings. The caterpillar of the Comma feeds upon Nettles and on the Hop, while that of the Faun feeds on the Willows.

Sidelights on the Corn Crop.

BY ALLAN MCDIARMID.

To the born farmer and the man who has a natural inclination towards working in the soil and among plants, there is one thing to be seen on the majority of farms in this part of the country that seems to him to be Nature's last word in production and a fitting finish to Her work that has been carried on in his interest throughout the season of growth that will again soon be coming to an end. That is the fields of corn that are every year becoming larger and more numerous in this Province and other parts of the country as well. Since corn was first grown it is a question if it ever made a better appearance at this time of the year than it does

now. And when one thinks of the poor start it got last spring and the cold weather it had to fight against for so long, the result is what might one call a "miracle of growth".

In every case where the corn-grower took the time and trouble to keep the cultivator going and to hoe his crop where and when it was necessary, he has been well rewarded. Standing from ten to twelve feet in height and of the dark green color that indicates a strong healthy plant, the fields of corn that we see everywhere this fall are hard to surpass in the way of beauty and are an indication of progress and prosperity as well. Six or eight months ago we were wondering if we were going to be able to get seed and all kinds of extravagant prices were being paid. But this difficulty was overcome, and overcome to such an extent that dealers were finally offering corn, which had been intended for seed, at a fifty per cent. reduction for grinding purposes. It wasn't all number one seed but enough of it seems to have grown to pretty well fill up the ground on which it was planted. It's a question if there is another crop grown that will overcome so many handicaps and make such good use of a short period of favorable weather. Looking at some fields about the first or second week in June one was tempted to plough up the whole thing and make a fresh start. In the race between the corn and the weeds the odds were all in favor of the weeds. But the outcome has been a lesson to a good many of us. Whether it's fighting the Germans or training a balky horse or growing corn, there's never any need of becoming discouraged. Our efforts are always rewarded and especially so in the case of the corn. The pay is in proportion to the work.

Corn has a rather interesting history although no one knows exactly when or where it originated. When Columbus discovered America he found the natives, or "Indians", as he called them, growing the plant, and it was he who introduced it to Europe where it has since become one of the principal crops, especially in the southern parts of that continent. In Great Britain the season seems to be rather too short and damp to mature any but the very early varieties but where they can grow it to advantage it is made use of in a surprisingly great number of ways. The grain is used for making bread, starch and whiskey. The stalks have been used as fire-wood, cattle fodder and for basket making, as well as thatching purposes. The fibre from the stalk was at one time manufactured into a sort of yarn, said to be of good quality; and syrup, sugar and even vinegar had their origin in this part of the corn. In Mexico the smaller parts of these stalks were used as human food without any particular preparation, so far as we can learn.

The husks were employed in the stuffing of chairs, saddles and mattresses by these same people, and in South America they used them in the manufacture of cigarettes. And in the making of paper they have also been turned to good account.

In some parts of the Middle and Western States they have a saying that "Corn is King", and on the whole it looks as though it had a right to the title. The fact that their crop of it out there amounts to between two and three billion bushels every year goes to prove that they place it pretty high in the scale. It is their great stand-by, and that apart from all that is grown for ensilage and cattle-feeding purposes.

And it is when it comes to this method of using corn for the support of animal life that it reaches the height of its usefulness. Forty years ago there were not many silos to be seen and any that had been built were more in the nature of an experiment than anything else. At first the corn was cut very green and put into air-tight square buildings and weights were put on top of the stuff to press it down and further keep out the air. After a good deal of experience it was found that if the silo was made tall enough that the weight of the corn itself was all that was necessary to exclude the air and, furthermore, that the corn didn't have to be very green, in fact, that it was an advantage to have it pretty well ripened. To their surprise it packed just as well as the immature corn and it was found also by the experts at some of the colleges that this corn that was cut in the milk in August had only about half the food value of corn that was nearly ripe. Now we know that corn that is absolutely ripe or that has been badly frozen can be preserved in a silo, if enough water is added as the silo is being filled.

In filling silos it would seem that sometimes more work is thought necessary than is actually the case. Some farmers will have three and even four men to tramp the corn as it is blown or carried into the silo. What really is needed is that the ensilage be well mixed and scattered, so that it will settle evenly. Leaves and stalks should be in equal proportion for best results. If a pipe is used inside the silo for spreading purposes, as is usually the case now-a-days, one man can generally manage this part of the work. The weight of the ensilage will do all the packing necessary, at least up to the last six or eight feet. The time for tramping and packing is after the silo has been filled. It's pretty hard to do too much of it then. And every day for a week or so afterward, fifteen minutes spent in walking round on the ensilage, paying special attention to what is near the edges, will be time well employed. There is no better practical method of keeping the air out and preserving the ensilage as close to the surface as is possible.

In getting our work on the farm done the first consideration is efficiency and the next is to accomplish it with as little effort on the part of the farmer and his help as is possible. And these objects should be kept in mind, particularly when it comes to handling a crop that cuts as large a figure in our financial welfare as does corn.