

one prove to me that the lime they eat is not for this purpose and for this purpose only? Meanwhile, I will undertake to prove the affirmative. First, let us dispose of the bone. In the shells of eggs, the lime exists in the form of carbonate of lime, while the lime in bone is phosphate of lime, and by no process short of a miracle can the phosphate be changed into the carbonate: it would be just as easy to change iron into gold. Where is the sense, then, of feeding bone of animals for this purpose? Yet, while the great majority of poultry fanciers do this, the number is not small who make it a matter of principle to burn all the bones of the family waste, and pulverize them, and mix the powder with meal, and thus dose the poor fowls all the winter long, telling the public at times very complacently how the eggs come in under this process! So much for the bone. Now for the oyster-shell, mortar, &c. The males eat, proportionately to what they consume of other food, as much of this lime as the females; yet no one, I think, will maintain that their egg-forming instincts call for it, or that their egg-laying propensities are increased by it. Let us examine this question from another stand-point. Can there be a parallel instance produced in animal nature where food is naturally taken in a crude mineral form? The minerals necessary for the structure and due performance of the functions of animal life are contained in the animal and vegetable combinations which we consume.

In some districts, cows are seen to fight over a bare bone. This is because the phosphate element is wanting in the exhausted soil of the pastures of such regions, and hence the vegetable product on which the cows feed cannot supply the necessary amount of phosphate. That such an appetite is unnatural, the result of the abnormal cravings of disease, the thin and rickety condition of such cattle demonstrates. To be convinced how unnatural such food is, consider the conditions of fowls and birds which live wild on the vast primitive formations of the country where carbonate of lime, in any mineral form, from the scarcity of snails over many of such areas, is almost unknown. Eggs are as readily produced by the feathered tribes that dwell there, and are contained in as fine a structure of lime as comes out of the pet poultry-house of any fancier.

Why do not farmers feed phosphate of lime to their cows, as every quart of milk drawn from them contains some of this mineral? Because the Creator was too wise a planner to make any such crude work necessary. He combined the portion of phosphate necessary for the full performing of her functions in the structure of the vegetable food of the animal, and made that most wonderful laboratory—the stomach and its organs, capable of extracting it from such food. So with poultry: the grain on which they feed contains in itself the proportion of carbonate of lime necessary for the formation of the shell of the egg.

If the reasoning thus far is not satisfactory, then let me say to some old won't-be-convinced, for every instance you will bring forward where the eggs of poultry lacked a shell, when not fed with lime fodder, I will bring a parallel one where they formed perfect shells, month after month, without having any access during the period to a particle of such fodder. A soft shelled egg indicates some disease in the ovarian system of the fowl; and, in such isolated cases, it is barely possible that lime, as fed, may act as a medicine.

If I am asked, "Why, then, do poultry eat lime?" I answer, for the same reason that they eat fragments of stone, to give them the means of grinding their food. Now, every miller knows that the harder and sharper the stone the better it grinds. The instincts of poultry teach them the same truth, and they will select in preference the hard sharp particles. They also seem to have a fancy for anything small but showy in colour; will hence occasionally eat buttons and the like. It is true they devour egg-shells when fresh, but it is also true that such shells have quite a coating of animal matter adhering to them; and the hens, it may be noticed, will eagerly turn them up with their bills, to get access to the little sediment of this, which oftentimes is found in the bottom of the shell. For the same reason, fragments of fresh bone may be of advantage. The fragments of stone and the like voided with the manure of fowls are always worn smooth; all the sharp angles are gone. Here, then, is a hint. In supplying grinding materials (that is the term, not food) to your poultry, supply them with such as is hard and contains plenty of sharp angles; hence reject old mortar, burned bone, or egg shells, and beach gravel, and give pulverized clam shells, pounded raw bones, pounded crockery, pounded stones, and the like. If I am correct in my position, Mr. Editor (and I presented substantially the same in an agricultural address several years ago), then I trust the old theory will no longer be dinged-donged about the public press, as much a reflection on the good sense of the community as it shames the scientific progress of the age.—JAMES J. H. GREGORY, Marblehead, Mass., in *Albany Country Gentleman*.

Entomology.

Canadian Butterflies.

SOME time ago, a box containing some rather dilapidated specimens of butterflies and moths, was left at our office by "Mr. Alex. Pirrie, of Brooklin House, Brooklin, C. W.," with the request that we should describe them in THE CANADA FARMER. As there was nothing particularly note-worthy among them, all being very common and well-known species, they were neglected for some time; we now, however, subjoin a list of them, with the plants upon which their caterpillars usually feed. For descriptions and figures of these, as well as many more of our Canadian species of insects, we must refer our correspondent to "Harris' Insects Injurious to Vegetation,"—new edition, edited by C. L. Flint. Boston: Crosby & Nichols, 1862,—a most valuable work which ought to be in the hands of all our educated farmers and gardeners who are interested in the ravages of our insect foes, and wish to know the best means of guarding against them.

The following are the species we received:—

Papilio turnus (Tiger swallow-tail butterfly), caterpillar feeds on the choke-cherry, and other species of *Prunus*.

Papilio asterias (Black swallow-tail), on the carrot, and other umbelliferous plants.

Colias philodice (Clouded sulphur), on clover and various trefoils.

Danaus archippus (the Archippus), on the milk-weed (*Asclepias*).

Argynnis cybele (Silver-spotted stillary), on violets and other flowers.

Vanessa antiopa (Cambernell beauty), on willow.

Sphinx cinerea (Ash-coloured hawk-moth), on lilac.

Saturnia polyphemus (Eyed-emperor moth), on elm, lime, &c.

Calocla cerogama (Yellow-underwing moth), on black walnut.

We shall always be happy to receive specimens of insects, from our friends in various parts of the country, and give what information we can about them; but as much of their value and interest depends upon the mode in which they are collected and preserved, especially in the case of the more fragile and delicate orders, we beg that a little care may be exercised in this respect, and attention be paid also to packing. To assist those who take an interest in this department of natural history, we have determined upon publishing shortly, brief directions for collecting, setting, and preserving insects. Should Mr. Pirrie intend continuing to collect insects, he cannot do better than become a member of the Entomological Society of Canada, whose headquarters are in Toronto.

Insect Destruction and Bird Preservation.

To the Editor of THE CANADA FARMER:

SIR,—Since coming to this country, twenty years ago, I have observed a great decrease in the number of our small birds, many kinds of which have almost disappeared; and to this I attribute principally the increase of the grubs and flies which infest our farms and gardens.

I believe that some of our legislators have taken the matter in hand and introduced Bills into Parliament for the preservation of the smaller kinds of birds, by preventing the shooting at and killing of them. I do not think that legislation can do much to remedy the matter; few men are wanton enough to exterminate, and it is only to those few that the law would apply. The mischief is entirely attributable to our common black crow, whose numbers have also largely increased among us, and which is quite a different bird to the rook of the Old Country. The crow here is entirely carnivorous, and will only feed upon roots and grain when something more to his taste does not present itself. crows, and the young of small

birds are his principal food, when they can be had, also carrion; and when he cannot find those he has recourse to grain and roots. I have frequently watched him during summer, when the birds are busy with their family affairs, searching every tuft of grass and bush in quest of a dainty morsel for his own family, in the shape of a fresh egg or an undegged robin or sparrow. If farmers would turn their attention at this time of year to destroying the nests of crows which may be built in their woods, their numbers might be easily diminished, much to the farmer's benefit, in the consequent increase of our small birds and the decrease of mischievous insects.

The nests of crows can be easily discovered at this season, as they build before the trees come into leaf. They are also very easily trapped or poisoned. To the sportsman the crow is also a great enemy, and I have no doubt but for their numbers we should find ten times the amount of game birds in this country that we do now. I have known a tract of country in the Highlands over which I have walked for days without seeing more than one or two grouse, and in the course of five years, after the proprietor began to encourage the trapping of vermin, principally the grey crow, one gun could with ease kill from fifteen to twenty brace of birds in a day. Other varieties of birds which bred with us increased in the same proportion.

NOR. THOS. MACLEOD.
Toronto, 25th March, 1865.

The Household.

Boot and Shoe Grease.

THE *Shoe and Leather Reporter* says hog's lard is admirably adapted to secure to leather both pliability and impermeability to water; train oil after it dries up, renders the leather brittle. Hog's lard renders the leather perfectly pliant, and no water can penetrate it. It is especially suitable for greasing boots and shoes; but in the summer seasons an eighth part of tallow should be melted with it. It should be laid on when in a melted state; but no warmer than one's finger dipped in the mass can bear. When it is first applied to a boot or shoe, the leather should be previously soaked in water, that it may swell up, so that the pores can open well and thoroughly absorb the lard. The liquid lard should be smeared over (to be water proof) at least three or four times, and sole leather oftener still. Afterward the lard remaining visible on the outside should be wiped off with a rag. By this means you have a water-proof boot or shoe, without the annoyance caused by most stuffs of penetrating the leather and greasing the stockings. An occasional coating of hog's lard is also to be recommended for patent-leather boots or shoes, as it prevents the leather from cracking, and if it be not rubbed in too strongly the leather will shine just as well after the grease has been applied.

BEAN SOUP.—"A Bachelor of 30 years" wishes a receipt for bean soup. Get a wife that knows how to make it.—Eureka, in *Country Gent*.

THE St. Louis Republican says that after experimenting for five years, Mr. Robert Moore of Bloomington, Illinois, has discovered a method of crystallization, by which the syrup from Imphee and Chinese sugar cane can be advantageously reduced to sugar.

SWEET CIDER.—A. M. Ward, Hartford Co., Conn., writes: "After years of 'fussing' with cider to 'make it good' I have this season found the short road to perfection. Took cider direct from the press, heated nearly to a scald over the fire, returned it to a barrel, and have since made daily use of it with great satisfaction."—*American Agriculturist*.

TOMATO SAUCE.—Mrs. G. Dowdeswell, seeing a wish expressed in the last number for a recipe for making tomato sauce, begs to mention a very simple mode adopted by herself for some few years past, by which she can have the same prepared by the cook as required, fresh at any time. The tomatoes are gathered perfectly ripe, free from cracks or bruises, and are gently wiped with a soft cloth, and placed in a wide-mouthed jar. Some vinegar, having been boiled and allowed to stand until cold, is then poured over them, sufficient being used to entirely cover them. The jar is then covered with wetted bladder, and the tomatoes keep perfectly fresh and good until those of the following season come in. The peasantry in the south of France keep the tomatoes in this simple manner. Their mode of making sauce Mrs. Dowdeswell, unfortunately, has not perfectly; but the tomatoes in the manner described, can be made as required into sauce by any cook.—*The Dutch House, Worcestershire*.