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The Agriculturist.

A WEEKLY JOURNAL DEVOTED TO LITERATURE, AGRICULTURE, AND NEWS.

ANDREW LIPSETT, Publisher.

"AGRICULTURE THE TRUE BASIS OF A NATION'S WEALTH."

ANDREW ARCHER, Editor

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Agriculture.

The Colorado Beetle.

Much has been said about the Colorado Beetle, but we are afraid, that very much more will be said about the pestiferous insect when, by sad experience, its powers of ravenous destruction become to be felt here.

In case some may never have seen a full grown specimen of the plague, we give the following description of it. Its scientific name is Chrysomela (Doryphora) decemlineata. Its size is about half an inch. It is of an oval form and somewhat shining body; its predominant color is orange, but the thick end of the antennae, the eyes and a heart-like mark on its neck shield are black, as are the fore and back margin of its body, and its longitudinal stripes; underneath its body are numerous black spots. The legs are provided with four joints; the under wings are of a pale red color. It undergoes the same changes as the butterfly. After casting its skin its chrysalis state begins, and then its dormant non-feeding chrysalis changes to a beetle. According to observations its development in garden and field proceeds as follows: In the beginning of May, when the plant puts forth its young green leaves, the beetle comes out of the ground in which it has wintered, and after about a fortnight the female lays a plentiful supply of orange colored eggs, of from twelve to twenty, on the underneath side of the young plant, during about forty days.

After laying its eggs, estimated at between 700 and 1200 in number, it feeds on the leaves in company with its consort. The young larvae, when from five to eight days old, follow their example. When young they are of a darker color, afterwards they become lighter. When the larva has attained its full length it resembles a caterpillar. Its hindmost ring, its head, and eyes are black, as well as two rows of protuberances, like warts on each side of its body. Arrived at this stage of development, in about seventeen or twenty days, this caterpillar descends from the plant into the ground and turns into a chrysalis. The beetle derived from it already begins to lay eggs in the middle of June, thereby producing a new generation of devourers, which, after having gone through their metamorphoses in fifty to fifty five days, are succeeded in the beginning of August by a third generation. The beetles of this last mentioned generation, which, until September, feed on the potato leaves, remain all winter through under the earth, as before stated. "We cannot," says a writer in the Leisure Hour in describing the habits of the Colorado Beetle, "but reflect on the Colorado provision of nature, that the two first families of this tribe should remain above ground, and that it is only the third and last generation which find their way into the earth when winter draweth nigh."

The Colorado Beetle in the course of twenty years has travelled from the Rocky Mountains to Maine, and we may add New Brunswick. In 1877, it found its way across the Atlantic, and appeared at various places in Germany, and the anticipated visitation was considered of sufficient grave importance to be remarked on in the British Parliament. The London Times speaking of it said, "that this justly dreaded addition to the plagues of thirty centuries, surpasses them all in its locomotive powers, in its versatility, in its power of adapting itself to circumstances, and in the determination with which it accomplishes its ends. It can fly considerable distances and has a wonderful instinct for directing its flight; it can take to the water, and walk or paddle, if not in the open sea, which is not necessary, on rivers, pools, and docks, which is all it wants. In this way it approaches a barge or a ship, walks up the sides, stows itself away in a crevice, or deep in the cargo, and disembarks with the passengers and crew, knowing well that wherever they go board and lodging will be found. Active as its habits usually are, it can be dormant and apparently dead for long periods; it can instantly transform itself into a new coat, new limbs, new armour, and new digestive powers. It can change its diet, its dietary from year to year, nothing comes amiss with it; the diet fails and the insect undergoes a visible adaptation."

The Colorado Beetle is in verity a formidable invader; to its various protean powers which appear to baffie extermination, must be added its amazing fecundity. The writer be-

fore mentioned makes an estimate of the whole number that may appear during a summer season. Thus, in the month of May, 100 females will have laid their eggs in a potato field; their ravenous progeny, by the end of summer will amount to 7,000 to 20,000; and these again, in the months of June and July, will yield about 24 to 72 millions of eggs! The third generation, visible only till the end of August, may be reckoned by thousands of millions. This increase which almost exceeds belief, is owing to the potato plant on which they feed having become more succulent by culture than it is in its wild state. Though the voracious beetle travels fast and far, in multitudinous swarms, across immense stretches of territory, it is a mistake to suppose that the devastation committed by it is only partial and transitory, or that in the same ratio that the swarms advance they lessen or cease altogether in the districts they left. According to simultaneous reports from various parts of the United States, the devastation of the more western States by no means ceased with their departure, but continued six or seven years with more or less intensity, after which period it ceased; while in some regions they caused a loss only of from twenty to thirty per cent, in other places the ruin they surveyed so disheartened the holders of land, that the planting of potatoes was completely given up. If the green leaves of the potato were attacked in the middle of summer, it did not prevent the development of the bulbs, though they became of smaller size; but if the work of destruction on the plant above ground began when its new leaves first appeared, the bulbs never reached maturity, and it was then certain that the beetle must have wintered on the spot. It is easy to comprehend that the regions of which it has long been a resident suffer more than those which have been newly attacked, and that a greater deficiency in collecting the crops is there observed.

There is a diversity of opinion as to the most effective mode of fighting off the Colorado bug. Some hold that the best way is to encourage the propagation of insect eating birds; others say that this natural check is unavailing, that the only sovereign remedy is dry powder of Paris or Scheele's green (arsenite of copper) applied by a sprinkler; others advocate picking the beetle or larvae off the leaves by hand or by means of bags of particular construction, and by crushing the eggs deposited on the leaves. The last mode is very useful indeed when the beetle first makes its appearance, but for this country at least, the application of Paris green is most efficacious when the ravages become serious.

Feeding Fowls with Health. A correspondent of the Country Gentleman, taking for his subject, "the feeding of fowls for health," says:—"It is my sincere belief that fully one-half of the diseases which affect poultry are brought on by a torpid liver. It is frequently the trouble with old and fat fowls. The excess of fat appears to injure the blood, and the liver is the first organ to feel the effects. Beyond a certain extent, an overburden of fat in birds or animals breeds disease. They should be kept in what is termed a good working condition, except when being fitted for the shambles. Farther than this the effect is damaging. The liver becomes affected, and the other organs suffer in sympathy. The evil of intemperance may be indulged in by eating as well as by the partaking of ardent spirits. Long excess is detrimental to the health, and produces disease in one form or another. For this reason a change of diet is desirable. After fowls have been fed to a certain extent on one kind of food, change it, and mark the effect. But it matters little what food we give to our fowls, more especially laying hens, if we neglect to give them gravel. This is quite as important as the food itself. They require a daily supply of broken clam or oyster shells. These they devour eagerly, and they are as necessary in summer as in winter. Because the fowls run at large is no reason why they do not need shells.

Where fowls have been kept for a number of years, year after year in the same place, ranging over the yards at will, there is not an inch of ground that they have not travelled over again and again, and picked up all the substances available to them. Fowls, do not, like turkeys, range at long distances, but are more attached to their regular runways, and feed only therein. Consequently all the material required by them is closely hunted out. An old animal, or a large hard stone, should be kept for this purpose near their feeding places, and also a large heap of shells. Break a

suitable quantity each day (as they relish them better freshly broken) as large as a kernel of corn, and some larger, while in the breaking there will also be some like dust and sand. Of this they are fond. When this practice is followed up through the season, the fowls will be more quiet and scratch less. They are as often searching for something to cut their food, when scratching, as for anything else. The birds will be more healthy, and will perform their regular functions, and give their owner less cause of complaint.

If well cared for, fowls will not be troublesome, and one need not be particular about the breed. Brahmas are sluggish and take on fat easily, from the fact that they gorge and cram themselves with food. There is room for study while feeding fowls, where there are a variety of breeds kept together. The Leghorns will pick two or three dozen kernels, and off about their business—gathering their green food, or reposing in the shade, dressing their plumage—while the larger breeds will remain as long as there is a kernel left. A good way to manage them is to fill them up with broken pottery or coarse food. There were bitter complaints about the Leghorns last spring. They were accused of scratching all the grass up in the lawns, and wallowing holes in the walks. I investigated the matter. The walks, underneath the gravel, were paved with clam shells that had been placed there to be out of the way. The fowls had discovered and had determined to unearth them. I inquired into the matter, and found that the birds were suffering from the lack of their usual supply. A ration was provided for them each day, and the complaint ceased, while the production of eggs almost immediately increased.

There is perhaps no breed of fowls that shows the effects of a change more readily than the Leghorns. I do not say that in this respect they excel all others, but in my own experience I have found it to be the case with them. There is no variety that will be neglected and prosper. There is no denying the fact that our fowls for the past fifteen or twenty years have been gradually improving, both as regards the quality of the flesh and the egg production. Not only in beauty and variety, but in utility and adaptation to many different requirements, we have birds of all sorts, colors, classes and sizes. One can choose for himself.

BARNYARD MANURE.—The London Agricultural Gazette says:—"The farmer regards dung as by far the most important fertilizer which can be obtained. In his eyes it occupies a position much higher than that of nitrate of soda, superphosphate of lime, or any other substance. In this opinion the best scientific cultivators entirely concur, and it is delightful to find a point of great importance on which the learned chemist, the practical farmer, and the illiterate laborer are completely at one. No doubt each would approach his conclusion from far different considerations. The chemist sees in farmyard dung a happy combination of constituents, so blended as supply the losses accruing from cropping. The farmer and his man see in the same substance an unfailing help to a growing crop. Plenty of good dung, say they, is the stuff to put under anything, whether wheat or pulse. Other manures may be good for special purposes, but good, old-fashioned muck will do for every purpose. It is in itself a store of food which is gradually made available for growing plants during the entire period of their existence. It is the natural means of renewing fertility, because, in the economy of nature, the forms of plants and animals are after death, returned to the earth to be become incorporated with it, and then to assume new forms. Farmyard manure is quite as much esteemed upon the Continent as here, although the study of agricultural chemistry is more generally followed and more highly esteemed by farmers there than with us."

Geraniums must have a season of rest during the summer if they are expected to bloom in winter. Keep the plants in pots out of doors, under the shade of some tree, till September and water sparingly. In the beginning of September shake the soil from the roots, replant them in rich sandy loam, and bring them forward to the sun and air. Place them in a sunny window, in-doors, when there is danger of frost, and when they begin to grow give them an occasional watering with liquid manure. They need plenty of sun and air and a comparatively low temperature. In a hot room they will not do well. Cactas needs but little water, plenty of sun, and should have a small pot with light soil.—Rural New Yorker.

When to Cut Wheat. A correspondent of the Maine Farmer having propounded the question "when is the best time to cut wheat," the editor replies in this wise:—"The best time to cut wheat has been a much discussed question, and has been a diversity of views have been expressed upon the subject. Johnson's Encyclopedia gives us the details of an experiment practiced in England in 1840, by a person named John Hannam. This man cut a sheaf from his field four weeks before the grain was ripe. He let this stand in the field two weeks, when he hosed it, and on the same day cut another, which stood another fortnight, at which time the remainder of the field was cut, at the time when harvest usually begins. The straw of the first sheaf was perfectly green, and the grain, while plump, was full of milk; the straw of the second was of a hue approaching yellow, and the grain still juicy; but not so much so as the first; the last was cut when all signs of vivid health had disappeared. Samples of these were shown to a miller, who priced that cut green and the ripe sample at about the same, while he priced that cut in the raw state at two shillings per quarter more than either of the others. The difference in weight both of grain and straw was in favor of the raw over the ripe, and in weight of grain over the green also. This practice while it may succeed in the humid and cool air of England, would never do well here. If cut two weeks before being ripe, our hot sun would dry all the moisture out of the straw at once, and the kernel would shrink and shrivel to half its normal size. Others claim that the straw should be dead and the grain become hard before it is cut, but we dissent from this theory most emphatically.

In order to determine just when wheat should be cut to obtain the best results in respect to the quality of the flour, we must understand what changes take place in the kernel after it is first formed and cut at the right stage of development. When the grain is formed, it is simply a little sac filled with water, holding in solution a little sugar. If cut now the water would dry out and the grain would shrivel up and be worthless. As it progresses more sugar is formed and a portion of it is changed into starch, the granules of which floating in the centre gives it a white appearance, and the wheat is then said to be "in the milk." Next follows which is the nutritious or flesh-forming principle appears; it is this which makes the flour stick when kneaded into dough. As the process goes on the starch and gluten increase and the water and sugar diminish until the kernel becomes hard, and the kernel all becomes hard. We repeat; when the milk has all disappeared, and the kernel can be crushed between the thumb and finger, and the interior is soft and dough like, then cut the grain and other things being equal, the flour cannot fail of being in good quality, white and nutritious.

LICE, TICKS, ETC.—Prof. Verrill, in one of the reports of the Connecticut Board of Agriculture, says of the best, simplest, and softest washes for destroying external parasites of animals (man included), is a solution of sulphuret of potassium of water—varying the strength according to the age and tenderness of the skin of the animal. The solution will contain some free potash which might irritate the skin, if too strong. Otherwise there is no danger in its use, though it has a disagreeable smell. Another equally useful preparation can be easily made of quicklime, slacking it in water until it forms a thick, milky solution. Into this put a small quantity of sulphur as will dissolve by boiling for some time. The result will be a deep yellow solution, which is very effective. Care application, of gasoline will always banish lice, ticks, etc., with no injurious effects to the skin or animal.

Every resident of village, suburb, or country throughout the land who owns or occupies from a rod square to an acre of mother earth should have a garden. Nothing affords greater pleasure to the members of the family than the cultivation and daily sight of flowers, while the growing of fruits and vegetables adds to their comfort and wealth. Even if gardening is not profitable, in a money point of view, it pays largely in health and pleasure—both important items. So, good reader, don't delay or fail to have a good garden!—Moore's Rural Life.

Importance of Protecting Manure. The practice of keeping barnyard manure sheltered from the weather is continually gaining in favor with the farmers. To accomplish this object successfully, covered sheds are found indispensable. In England this plan is very widely practiced. The animals are fed and littered in covered stalls in which the manure is retained an entire season. These stalls, ten feet square, are placed in a shed of any desired length, open at both ends, but when occupied closed by doors. The stalls are separated by movable bars, so that when they are taken down a wagon can be driven through the shed to remove the manure. The floors of the stalls are about three feet below the level of the ground, and the cattle are not taken out till they are sold or slaughtered. During this time the manure accumulates, mingled with litter cut to a length of a few inches. As it is trodden down closely the air does not heat. It decomposes gradually, being kept moist by the liquids discharged. All the fertilizing elements are thus preserved without loss from washing or evaporation.

The cattle fed in this way are not only fed with economy, but maintained in good health. They are daily garded and kept clean, and supplied with water, manifest entire contentment. The increased value of the manure by this plan has been repeatedly proved. The experiments of Lord Kennaird showed a result in wheat equal to 55 bushels per acre with manure thus protected, against 42 bushels with common barnyard manure; and in potatoes the yield per acre was 471 bushels with the usual kind. These results clearly show that the gain in manure by this method is much more than sufficient to counterbalance the exact cost.

The New York Tribune says to an enquiring correspondent:—"All the desirable qualities are not found in their fullest development in any one breed of fowls. For size, Brahmas, Cochins, Dorkings are Plymouth Rocks and good, being the largest. The Brahmas and Rocks are also good layers and good nurses, quiet in disposition and altogether pleasant and profitable. The so called laying breeds are smaller in size, more active and restless, and poor sitters, but produce many eggs. Among these the Leghorns, Hamburgs and Houdans stand high, and the Polish should also be classed with them. If one wishes to make a selection from the large breeds, he would do well to choose Brahmas or Plymouth Rocks. Of the layers, he may take his choice, but the Polish are the quietest."

A farmer has experimented with manure taken from his barn cellar under cover and exactly the same kind of manure dropped just outside the cellar and of course exposed to the weather. The crop from the former was just about double that from the latter.—Lowell Courier.

Spaying Cows. The following reasons are given why dairymen should spay their cows, when not intended for breeding:— 1. Spayed cows are more easily kept in good condition than cows that are not spayed. 2. They are less liable to sickness of an epizootic kind, and when sick, more certain and easily cured. 3. When epizootic diseases are present in the vicinity, or even in the herd, spayed cows are always in condition and fit for the butcher. To prevent loss and save expense in the treatment, with the attendant risk of loss of some, and loss of condition and milk in all that are effected, they can be sold without loss—which is not the case with cows not spayed, and when pleuro-pneumonia is among them. 4. Spayed cows give the same quantity and quality of milk the year round if properly cared for. 5. Ten spayed cows will give the year round as much milk as double the number of cows not spayed, thus saving the interest on the outlay for ten cows, together with the absence of risk from loss of some of the principal by death of one or more by sickness or accident; not to speak of the feed of ten cows and their manure, the farmer can best estimate the difference in value. 6. With spayed cows there is no risk to run from milk fever, nor trouble with cows called bullers. 7. To fatten a cow, spay her instead of giving her the bull, as is the present custom, by which time and feed are consumed; and the animal is not made very fat after all, for she has to provide the fattening and growing sustenance to the calf, which otherwise would have been appropriated to herself; nor is this all, for the belly of the cow is at once discounted by the butcher, as it is not saleable in the market.—Farmer's Union and Tribune.

Fertilizers for House Plants. When the plant is in a bad condition, it is a mistake to apply a stimulating fertilizer. The causes of ill health are many, but the most general one with those who have had no experience in the care of plants is over watering. Plants, to live, must have water, therefore the more water the better, seems to be the reasoning, and the consequence is starved, nearly leafless sticks in a pot of mud. In the majority of cases withholding the water is one of the things needed, and with invalids a stimulating fertilizer is the one thing of all others not needed. When plants are in a flourishing condition and making growth, then fertilizers may be useful, especially if the soil in the pots was originally rather poor. Any of the fertilizers used in the garden would answer for plants in the house, were it not necessary to avoid unpleasant odors, and to consult neatness and ease of application. For hard wooded, slow growing plants, very fine bone—flour of bone—sold by seedsmen for the purpose, is perhaps the best; a few tablespoonfuls being forked into the soil of the pot. For soft wooded, quick growers, a liquid fertilizer may be used. This may be guano, a tablespoonful to a gallon of water; soot, two tablespoonfuls to a gallon, or the water of ammonia (liquid hartshorn) of the drug stores, an ounce to the gallon. Water the plants with either of these, instead of clear water, once or twice a week, as the condition of the plant requires. No invariable rule can be given.—American Agriculturist.

Where to Locate an Apiary. The first great point in going into the bee business is the location of the apiary. There are several points that should be considered. Perhaps we should say water comes first, because it is something we cannot get along without. There is a great quantity used by the bees on a hot day to keep the combs from melting down, besides what is used in feeding brood in the latter part of the season. When the wind blows from the east, hot and dry, I have known bees to use a pound a day to the hive, allowing a sufficient quantity for evaporation. A bee's life is governed, we might say, by the work it does, and if it has to fly a long way for water, it cannot for its life bring the honey to its owner, it could if the water was handy. Wet sand is the best for bees to suck water from, for none are drowned.—E. x.

Sub-earth ventilation, for making cool dairy rooms, as practised in Illinois, consists in laying air pipes deeply under ground for several rods, whereby the air drawn through them loses its heat in the earth. Land that is shaded by trees would be cooler at the same depth than that which is open to the sun. Mr. Charles W. Sylvester of Harvard, says the Belvidere Standard, has been using these pipes for three years, and keeps his milk room at 56 degrees the year round. This is a system well worth the attention of our dairy men.

AMERICAN VINES.—A great deal of excitement is being exhibited in the vine-growing provinces of France in the experiments now in course of being tried with American vines. The most learned professors are devoting their attention to the subject, and with good reason, for the object is of a constantly increasing importance, being no less than resistance to the dreaded phylloxera by means of a fresh stock of plants. It seems to have been pretty well established that some at least of the varieties imported from the other side of the Atlantic are proof against this remorseless foe. The most celebrated of these are the river grape, the ash grape, the summer grape, and the heart-leaved grape, all of which have been studied in great detail by M. Millardet, professor at the Faculty of Sciences in Bordeaux.

A correspondent of the Nebraska Farmer makes the following pertinent observations:—"It is a query with me why farmers do not write more for farm papers. There are numbers who could write good, strong articles of practical value, if they would, and so, by interchange of ideas and experiences, all be benefited. I have a conundrum I would like to ask: Why are farmers like a dark lantern? Because they are full of light but do not let it shine out. Now I know some few things I think are pretty good, and I would like to swap ideas."

The milking propensity in some breeds of cows is extraordinary. Some families in a breed, too, are famous in this way, and single individuals are now and again very remarkable. Lina, an English Jersey cow, yielded for 1876, 77 and 78, an annual average of 8,852 pounds, probably much more than twelve times the weight of the cow, or, in other words, she gave in 36 months an average of more than her own weight per month in milk. That the quality of hay is very materially dependent on the time of cutting is well known to experienced farmers. The longer grass is left standing after it has blossomed the greater is the increase of indigestible woody fibre, and the greater the diminution of soluble nutritive constituents in the hay which it yields, and precisely the same remarks apply to the clover crop. A slop made of corn and oats, ground in about equal parts, with a little oil meal added, makes the best food for the sow while suckling, to increase the flow of milk; and this, with clover pasture and plenty of soaked corn during the summer, will promote a rapid and healthy growth of the pigs. As foaling approaches brood mares should be turned into a loose box. The extra exercise is beneficial and they rest more at ease. Their work should be lightened. The most gentle treatment should be exercised; the tempo of the colt often depends upon this.—American Agriculturist.

Paraffine is coming into use in England as an insect destroyer. One wine-glass full to four gallons of cold water is said to be a mixture that deals death without injury to plants. Ants are sometimes very destructive to rose bushes especially when they are coming into bloom, and paraffine water is very thorough in killing them.

Brains with Muscle.

Some people imagine that farming requires but little outlay of brain-power to make it successful. But as some one has truthfully said, "Brains make the best fertilizer a farmer can use." Take two men, one of them with half the physical strength of the other, the weakest man of the two will accomplish more than the other if he excels the latter in brain-power. We have known large, stout, healthy men, who were hard workers, and yet always on a "stern chase" with their work; they were always in hot water, always poor from the simple fact that their bodies were better than their brains. Such a man, if he is doing as simple work as picking up stones on a side hill, will get his stone-boat on the upper side of a large boulder, and then, by stress of mind and muscle, roll it on the drag, while the weaker, but wiser man, would place the boat on the lower side of the stone, un hitch his team, place the chain about it, and in a twinkling have it loaded, and save his own strength for some more important occasion. And so it goes to the end of the chapter, with the man who does not "think"; and this law applies to indoor as well as outdoor work.

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