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#### TRAVELER'S GUIDE.

BELLEFONTE & SNOW SHOE

eaves Bellefonte 9.12 A. M., arrives at Snow Shoe 11.25 A. M. Leaves Snow Shoe 2.30 P. M., arrives in Bellefonte

Leaves Bellefonte 4.45 P. M., arrives at Snow Sho 7.25 P. M. S. S. BLAIR, Gen'l Superintendent.

# BALD EAGLE VALLEY RAIL-ROAD.—Time-Table, April 29, 1880; Mail. WESTWARD. EASTWARD. EXP. Mail. Vail Baid Eagle Fowler Milesburg Curtin Mount Eagle Howard Eagleville Beech Creek Mill Hall Lock Haven

## DENNSYLVANIA RAILROAD

—(Philadelphia and Eric D
after December 12, 1877;

WESTWARD.
ERIE MAIL leaves Philadelphia...

"Harrisburg....
"Williamsport...
"Lock Haven...
"Renovo..... " "Williamsport."
Passengers by this train arrive in Bellefonts at " Williamsport ... arrives at Lock Haveh. PACIFIC EXPRESS leaves Lock Hav arrives at Harrisburg..
Philadelphia ERIE MAIL leaves Renovo......

Expression of the second secon

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BROWN CHEMICAL CO., Baltimore, Md.

## The Centre Democrat.

BELLEFONTE, PA.

AGRICULTURAL

NEWS, FACTS AND SUGGESTIONS.

Every farmer in his annual experience tiscovers something of value. Write it and and it to the "Agricultural Editor of the Democrat, Bellefonte, Penn'a," that other farmers may have the benefit of it. Let communications be timely, and be sure that they are brief and well pointed.

THE plow should be abandoned as a corn cultivator. It does not cover as much surface as the horse-hoe, and although it may not be injurious on some soils and under some circumstances, yet otherwise it may do serious harm to the crop.

WE are indebted to Secretary T. quarterly report of the State Board of Agriculture. The Board is doing much good work for the cause of agriculture in the State, and we believe it is appreciated by all our best farmers. The summer meeting of the Board was held last week in Williamsport, and the local papers speak of it as one of great interest. One of the turning plow, especially when the fields are grassy. The fact is, it matters little what the name of the implement is, so that it stirs the soil thoroughly address of Prof. Jordan, of the State Prof. J.'s address, but shall endeavor to give it in full before the feeding season arrives. The fall meeting of the Board will be held at York.

cial fertilizers is rapidly growing throughout our State, and their cost light and moisture to produce their best effects. To do this the hoe is called the annual expense of many farmers. The Democrat steadily and earnestly protests against the substitution of these mineral fertilizers for good farmyard manure, by the average farmer, but holds that in very many instances this may be supplemented by him with great advantage. The be farmer who uses them to any considerable extent, however, must ex-ercise great care and circumspection first time it is not necessary to stir the in making his purchases, or he will certainly "pay for more than he gets." The opportunity for fraud and adulteration in their composition is too great to be carelessly thrown aside by the average manufacturer, we believe the average manufacturer. we are perfectly safe in saying that of all the many brands on the market, more than one-half are sold at gone over. In fact, it may be laid down as a rule that you cannot cultivate too often or too much. It is betthe purchaser can derive from their ter for the ground and better for the use. The State Board of Agriculuse. The State Board of Agriculture is doing excellent service by analyzing samples of such of these alleged "fertilizers" as are offered for sale in the State, and publishing their real values and selling prices, side by side, for the benefit of farmers. We have before us a table just issued by the Board giving the results of fifty-eight samples selected in accordance with the act of June large, vigorous plants held in reserve for this purpose. Such as have the center bud destroyed, either by insects or 28, 1879. Of the fifty-eight brands represented no less than forty-one must be at once replaced. In short, there must be no vacant hills and none are represented as having been selected in Bellefonte, though all were market, "be sure you're right, then

go abead." Remedy for Cabbage Worms.

From the American Entomologist Of all the many remedies that have been tried for the imported cabbage worm since it first began to spread over the country and to play havoc with our cabbage fields, few, if any, have given entire satisfaction. It is safe to say that the most satisfactory remedy so far discovered is in the use of pyrethrum. We were the first to apply this in 1879, but did not care to recommend it until further experi-ments have been made. These we

TOBACCO CULTURE.

How to Grow the Coming Crop.

EARLY CULTIVATION OF THE TOBACCO FIELD NECESSARY -- HOW IT IS TO BE DONE. THE HAWK MOTH AND GREEN TO-BACCO WORM-HOW EX-TERMINATED.

Cultivation of the tobacco field should begin as soon as the young plants have taken root and begun to grow. This is from eight to fourteen days after setting out, depending much upon the weather, and may easily be told from the changed appearance put on by the plant. The care or carelessness with which they are set out also has much to do with their early start. When planted without due attention being given to placing the roots in their natural position the plant is frequently set back for weeks, much to the surprise of the farmer, who can't understand why some plants are so thrifty and others so backward. Most frequently careless planting is the cause why some plants remain small and sick-ly-looking the entire season through.

EARLY CULTURE NECESSARY.

But to return, early cultivation is important. No matter whether the field WE are indebted to Secretary T. is grassy or not, nothing brings the J. Edge for copies of the twelfth plant along faster than early and thor ough cultivation. The ground has be-come more or less hardened and must loosened up. It is not necessary to go deep, however, only the surface soil should be stirred; the sub-soil must be left intact. Almost any implement that does the work effectually may be used. A cultivator is most commonly employed for this purpose. The pref-erence in the South is often given to and effectually destroys or keeps down address of Prof. Jordan, of the State the grass and weeds. Old land general College, upon "The Economical use by requires more cultivation than new, of Stock Foods." We have not Lancaster county, as a rule, renders the grass and weeds easy of extirpation.

USE OF THE HOE. The hoe is a most important implement in the tobacco field. The cultivator does effectual work between the rows, but cannot be allowed to approach the plants too nearly, lest the tender The use of artificial or commerinto requisition. All grass that grows close to the plant must be removed by hand in order not to endanger the lat-ter through a careless blow with the hoe. In loosening up the earth around the plants care must be taken to carefully replace as much as may have been drawn away during the operation.
All dirt that may have been thrown upon any of the leaves must be carefully removed. The ridges must also be hoed down and the surface made level. Level cultivation looks much more workmanlike and pleasant to the soil much around the plants, but this must be more freely done during the subsequent hoeings. About two weeks after the first cultivation, when the but we advise no one to rest here, ever though his field looks clean. The more foul the field the oftener it must be a shorter singletree in order that they
may sustain no barm from that cause,
and in this way the process of cultivation may go on until it becomes impossible longer to pass through the rows
with a horse. This careful cultivation also brings into notice any diseased or imperfect plants. All such ought to be removed and their places supplied with accident, will be likely to throw out a number of suckers instead; all such are sold at prices averaging very much above even the theoretical value accorded them by chemical analysis. Of the fifty-eight brands reported, five with imperfect plants on them. A few its full growth, it is not necessary to re-move it, as it is no longer able to harm the crop, and may even be beneficial in manufactured outside of this State, and of these five but one is worth more to the farmer than its selling price, and in this the theoretical margin of profit is but three dollars and thirty-four cents per ton. Once more we say use all possible care and diligence in making, saving and diligence in making, saving and weeds get a start which no amount of applying stable manure; and in pur-chasing the alleged fertilizers of the Not only is the grewth of the plant retarded, but the grass draws from the soil the very food put there to nourish the tobacco plant. When grass grows freely about the plants it is apt to be come so firmly rooted as to resist the hoe, or else to result in damage to the plant in the attempt to remove it.
Then, too, as early ripening has latterly
been regarded as highly desirable, it
must not be overlooked that by careful
early cultivation the period of ripening

attended the earlier operations of the

The moth from which this worm originates is the well-known dusky-wir-ged miller known to entomologists as the Sphniz quinquemaculatus or Five-spotted Sphnix. This moth is of a greyish color, having five orange-colored spots on each side of its body, from which it takes its name. It may be seen in the summer twilight in our gardens, flitting from flower to flower, from which they extract the sweet juices by means of a semarkable towards requires. extract the sweet junces by means of a remarkable tongue, sometimes five or six inches long. This tongue or proboscis when not in use is coiled up and stowed away between the two feelers. The hawk moth is frequently taken for a humming bird, which at first sight it much resembles, although its flight is much resembles, although its flight is much slower and it is more easily ap-proached. The first of this army of moths come along in June, but not numerously as a rule. It is the opinion of some that dry weather early in the of some that dry weather early in the season is unfavorable to its production, while an early wet season makes them more plentiful. However this may be, the hawk moth comes along in June and deposits its eggs on the under side of the leaves, when the plants are about a foot high. At first these eggs are greenish in color, but gradually grow yellowish or a cream color, and in about twenty-four hours the hatching process is completed, when the minature tobaccoo worm, hardly thicker than a hair and only an eight of an inch long, issues forth on its mission of destruction. Should the eggs have been deposited on the upper side of the leaf, minute worm at once eats a small hole through the leaf and passes to the under side to continue its depredations. From the first its appetite is most ravenous, although the damage during the first four or five days of its existence is small, because of their diminutive size At the end of about five days it sheds its old skin and makes its appearance in a new dress. This is the signal for a renewal of its career of destruction. If not arrested in its course it will soon ruin the most promising crop. Not content with ruining a single leaf, it will, if left alone, destroy an entire plant, and sometimes more. It con-tinues to grow for twenty-five or thirty days, when, having attained its full size continues to gorge itself on the ju the plant a few days longer, after it crawls to the ground, which it enters, and where it remains in the pupa state about twenty five days, when it once more sends forth a hawk moth, to repeat the work of destruction.

NECESSITY FOR ITS DESTRUCTION As each moth lays about two hundred eggs, it at once becomes apparent that the second crop of tobacco worms, which comes along in August, is much more numerous than the first one. What is more, it comes about the time when the plants are sending out suckers, among which many take refuge when quite small, and thus escape de-tection. The necessity of a resort to every possible means of destruction at once becomes apparent. Every moth killed before it lays its numerous brood of eggs is so much towards killing off osts that come later on in the sea-Every moth destroyed in June, means at least one hundred worms less in August. Hence the importance of a vigorous warfare against the earliest horde that makes it sppearance. Un-less this is done the later army is some-times so great as to literally defy the most determined efforts of the tobacco

HOW TO KILL THE HAWK MOTH Numerous methods have been suggested and are employed to destroy this magnificent moth. It seems to have a strong inclination for the sweet juices found in the "Jimson" or Jamestown weed (Stramonum.) and wherever this plant grows the hawk moth will be found hovering over its flowers in the summer nights. We have also noticed that it affects the flowers of the primrose—these plants are regularly resorted to by them for food. These, then, are the places to kill them. While enare the places to kill them. While engaged in extracting the nectar from the flowers they may be approached and killed. A light paddie will be found a very effective implement for this purpose. The Jamestown weed, planted here and there through the tobacco field, will be sure to draw them. While this method of destroying them is resorted to by some, others ing them is resorted to by some, others inject poison into the flowers of the above plant and thus kill the moth. An ounce of cobalt dissolved in a pint of water is mixed with molass drop or two put into every flower will the best time to do this, and the flowers so treated should be pulled off on the following day, or the entire plant may be destroyed. If left, bees will also find the poison, and if not killed themselves, will most surely present their owner with poisoned honey.

HAWK MOTH TRAPS.

During the past few years wire traps have been introduced which are hung through the field, with flowers of the Jamestown weed inserted as a bait. They are reported as being effectual, considerable numbers of moths being sometimes captured in a single night. An ingenious Tennessean has also conceived the idea of making imitation. Jamestown weed flowers out of porcelain. These are charged with poison every evening and hung through the field. Being cheap, large numbers can be employed and they are said to do their work very effectually. So far as we know, they have not been tried in Pennsylvania, but they seem to us to merit favorable consideration. In the use of the above remedies or prevent. sometimes captured in a single night use of the above remedies or preventives there should be co-operation among the tobacco growers of a district. If such is not the case, no matter how fast one farmer kills off the moths, plenty more will come from abroad to take their place.

heir place.

No matter however concerted or determined a war on the kawk may be waged, plenty will escape every method employed for their destruction and lay employed for their destruction and lay their eggs undetected and unbarmed, and the regular succession of tobacco worms will make its appearance. The last and surest remedy is hand picking, and this must now be resorted to. We lay little stress on the traditional flock PAINE, GRAFTON & LADD,
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While the tobacco planter is carefully at the different year, and have made the present year, and have made to be made by a number of our agents and eorrespondents. The our agents and eorrespondents. The our agents and eorrespondents. The different worms affecting in fluences. Papils admitted at any time. Yearly expense about \$2508.

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Something in the tobacco planter is carefully at the tobacco plants shall have order that his tobacco plants shall have order that his tobacco planter is carefully at the distribution. We have made the present year, and order that his tobacco planter is carefully at the distribution. We attending to the grass and weeds, in order that his tobacco planter is carefully at the his tobacco planter is carefully at the stress on the traditional flock our agents and eorrespondents. The have made the present year, and order that his tobacco planter is carefully at the distribution of turkeys so much specked to the united stand fluences. Papils admitted at any time. Yearly expense about \$2508.

While the tobacco planter is carefully at the the tobacco plants and wirest remedy is hand picking, and this must now be resorted to. We have made the present year, and words at any time. Yearly expense about \$2508.

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Something in the tobacco plants and words and this must now be resorted to. We have made the present year, and words and this must now be resorted to. We have made the present year, and words and this must now be resorted to. We have made the present year, and words and this must now be resorted to.

While the tobacco plants and words and words and words and words and words and words a

magnificent leaves of "Glesner" "Pennsylvania Seed leaf." There is, therefore, no remedy for it. The farmer or his boys and girls, must go to work with their fingers, and though the worm is repulsive in appearance he is harmless and may be pulled off with impunity and killed. From the hour the hawk moth lays her eggs until the crop is cut down the duty of hunting and removing the warms pust he removed. the hawk moth lays her eggs until the crop is cut down the duty of hunting and removing the worms nust be regular and unremitting. Every three days is not too often to go over the field, and three times a week would be better still. Especially is this the case with the grower of seed-leaf tobacco. The value of his product depends almost exclusively upon its fitness for cigar wrappers. When full of holes it is useless for this purpose. The freer of holes exclusively upon its fitness for eigar wrappers. When full of holes it is useless for this purpose. The free of holes his crop is the higher the price it will command. It is doubly important to him, therefore, to get it to market in the best possible condition. Heavy rains sometimes wash off a few eggs and dector them, but this is only a telescope them. rains sometimes wash off a few eggs and destroy them, but this is only a tri-fling aid. Late and early, in sunshine and rain, he must be in search of the destroyer. No after process is so import-ant as this because, if his crop is badly worm-eaten, no after-care can make worm-eaten, no after-care can make good the damage. When hunted for at short intervals the worms are more easily found, as they do not leave the place where they begin operations for several days and may therefore be also a hole where they have first eaten a hole through the leaf. Later they change through the leaf. days and may therefore be looked for through the leaf. Later they change their position frequently and must be searched for over the plant. Its inhabits are also of importance. In hot weather it feeds chiefly in the morning weather it feeds chiefly in the morning while it is cool, whereas in cool or cloudy weather it feeds during the warmest part of the day, and is therefore more readily discovered in the afternoon. Worming should be done with much care. A worm or two overlooked on a plant may effect its destruction before you come around again. Be sure therefore that your work is there sure therefore that your work is thorough. This is the only real safe-guard. Some seasons they are far more numerous than others, owing no doubt to more favorable conditions encountered during the previous season. Tobacco that is mature or nearly so suffers less from the ravages of the tobacco worms than that which is younger; the leaves of the latter, being more tender and succulent, prove more attractive.

DESTRUCTION BY POISON.

We have not alluded to a custom which has prevailed to a very moderate which has prevailed to u very moderate extent among some growers, of using Paris green as an agent to destroy to-bacco worms. The tobacco leaf is porous and gummy and capable of absorb-ing the poisons thrown upon it. These would undoubtedly be retained in the leaf to some extent, enough, perhaps, to render the tobacco harmful to those who used it. For this reason we con-demn the use of Paris green for this purpose in the strongest terms, and h the custom of using it will be entirely discontinued. South Carolina planters have been in the habit, we understand, of applying a weak solution of blue vitrol to the plants, which is said to be very efficacious in the destruction of the worm.

In addition to the tobbacco worms, the grasshoppers do a good deal of in-jury during some seasons. Luckily for the tobacco farmers, this is not often, because for this plague there is absolutely no remedy. Their numbers are so great and their work so expeditious that when they come along they do their evil work before a remedy could be applied. For some years the damage done by these roots in Personal Property of the control of the contro age done by these pests in Pennsylva-nia has been comparatively small, and they are not much dreaded by our tobacco growers.

#### Business Cards.

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