

FARM AND ORCHARD.

Plant Foods and Soils—The Power of Roots.

Silkworms—Individual Characteristics.—Hen Roosts—Poultry and General Farm Notes.

The fertility of soil depends not solely on the composition of the soils, but also upon the availability of the food existing therein that comes within the capacity of the plants to appropriate, either by the effects of chemical reaction, or by the power of the roots to change the composition of the soil itself.

It is not to the solubility of plant food alone, however, that the plants secure their needed sustenance in every case. Experiments have shown that the plants at the Experimental Station throw additional light on the methods of plant-feeding, as it has been demonstrated and accepted as a fact that the roots of plants are able to take even more plant food from the soil than that which water alone can dissolve, as the ends of the little rootlets have been shown to be acid, and where plants are growing upon a limestone soil it is an easy matter to find some stone on the surface of which a rootlet may have fastened itself, which demonstrates that the rootlets are acid at their extremities, and their power to take plant food from the soil is greater than that of water.

The power of the roots to convert insoluble material into plant food is one of the factors that enter into the process that permit the soil to be increased in fertility when green manural crops are grown and turned under, which is a restoration of the soil, and the fact that the roots of plants are able to take plant food from the soil is greater than that of water.

Not only do rootlets have the acid reaction mentioned, but the dissolving power of roots varies, as experiments with the grains have shown, oats having greater power to extract potash from the soil than wheat, barley or rye. This variation renders it possible to make a correct analysis of the soil by the method by which the farmer can satisfy himself to experiment with various fertilizers on separate plots and note the effects of the different fertilizers.

Individual Characteristics.—A flock of hens, though only one flock and looked upon as a collective number, is really composed of individuals that vary differ widely in their characteristics as so many human beings, and this fact is nearly always overlooked, though it is a matter deserving as much consideration as any other. We are familiar with the feeding of animals, and know how one of them may be fastidious, refusing to eat certain feeds, while another of the family take find some feeds that are rejected by others.

But if the poultryman is to become familiar with the individual characteristics of his hens, and attempts to keep large numbers, he will find it for him to do so? It is doubtful if he can, even over a long period of time, accomplish such a purpose, but he can at least feed in a manner to suit some of the members of his flock, by varying the food frequently and feeding such foods as may be required for his purpose. Nature prompts the hen to select the best food some extent, and the poultryman should at least separate his hens into flocks that are as uniform as possible. He should not have the laying hens and the non-layers in one flock, or the old hens and the pullets together. The laying hens, when producing eggs, need a nitrogenous diet, and a little care in providing them with food rich in the elements that compose the eggs will keep them in good condition. To keep them with hens that are being fattened for the market will cause them to eat the more carbonaceous food in lieu of the nitrogenous, and thus seriously interfere with the duties of both flocks.

The poultryman has another privilege. He can breed for uniformity. By careful selection of the best males and females, he can have good appetites, he can cull out only the best of the delicate ones, and by using some preferred breed and selecting males that will, in his opinion, transmit the best qualities, a greater uniformity will be secured, production will be increased, and the labor of feeding more or less reduced by reason of a more uniform flock. Some individual type on the part of all the members of the flock. The failures of many are due to the non-recognition of individual characteristics, and it may require a complete change of the stock in order to secure uniformity. The person who uses the pure breed, and knows their points of excellence and peculiarities, has a great advantage over him who breeds his fowls in a haphazard way, without regard to individual merit or the uniformity of the flock.—P. H. J., in Rural New Yorker.

ABOUT SILK WORMS.—The silk worm is as old as history. India and China from time immemorial have raised the larvae that furnish the silk of commerce. So long ago as the time of Thibetian men were forbidden to wear the lustrous fabric woven of the cocoons of the silk worm, and since that time the fair sex have made themselves lovely with silk tissues even to this day. The Romans gave all their silk from the East, with one notable exception. Hellogabalus defied the Roman canon, and appeared in the amphitheater clad in silk from "top to toe," and suffered reproach therefor.

About the year 550, monks brought silk from China to Constantinople. From thence the eggs were carried first to Greece, then to Sicily, and later to Italy. The soil was productive of the mulberry, and the climate favorable to the larva, and the manufacture flourished, and continued yet. Spain later took up the industry, and still later France, and the latter country is now the largest producer of silk and silk fabrics, the date 1521 being given as the inauguration of the manufacture, and forty years later the rearing of the worms. There is now no country that produces a close second in spinning, and when the price of labor in this country falls to that of other countries it overcomes its population there is no country that will produce better silk for spinning than will this.

Japan was added to the silk-producing countries much later than India or China. To-day more than three-quarters of the world's supply comes from these three countries. Besides the true silkworm, which feeds on the mulberry, but which will also produce good silk from the leaves of the osage orange, there are a number of other species of which produce strong, lustrous and valuable silk. China and India have a caterpillar from which is made the fabric called tussah, and also a caterpillar producing silk which feeds on the castor-oil bean of commerce. Nevertheless, no insect has yet been found so valuable for cocoons from which the silk is made as the true silkworm (*Bombyx mori*), though the Ailanthus (*Philosamia cynthia*) has acquired considerable importance, and the large American moth (*Tetia polyphemus*) of the family of the true silkworm, makes a strong silk, and will feed on the oak, chestnut, willow, cherry, apple, and many of some other trees.—Prairie Farmer.

Seeing a farmer near me building a new hen-house the other day, I took occasion to give him my ideas. He was putting in his roosts in the old-fashioned way, one being above the other on an angle of about forty-five degrees. In this way the roosts are led to standing all get upon the highest roost, and as it gets full, the weak ones are crowded off and fall to the ground; they begin again to climb up, only to repeat the same performance, until it gets so dark that they stop climbing, resting content upon a lower roost, or even upon the ground under the roosts. In this way, and by falling from the roost to the ground at night, heavy fowls, especially when very fat or very full of eggs, are often crippled in the legs or otherwise injured. Many likely and valuable fowls are completely spoiled in this way. I told him that I should build the roosts all of the same height, and no more than two and a half feet from the floor. He seemed to be carrying an old farmer who was present declared his intention of taking out his roosts, which were in the "ladder" style, and putting in new ones, level and lower. I think they will save him enough before summer by so doing to more than pay for the labor it will take.—Boston Journal.

Do not put up an expensive poultry building because some millionaire sets the example. If the ducks and geese are picked regularly during the summer and early fall they will not be increased in fertility when green manural crops are grown and turned under, which is a restoration of the soil, and the fact that the roots of plants are able to take plant food from the soil is greater than that of water.

It is not the state of the market that causes failure in poultry-keeping, but the state of mind of the poultry-keeper. The layman never makes ends meet on a small farm, and he never expects to have hens keep them in idleness. The scraps from the table soaked in sweet milk until soft make a good feed for young turkeys, especially in the summer. Do not be afraid to give your fowls plenty of clean water. It will not hurt them, though judging by appearance of the drinking vessels in many yards, one would be led to think the owner thought so.

At least once a week the hens should have a feeding of charcoal, or nubbins of corn on the ear may be burned and fed. At this season of the year every chicken confinement in green pens, and before an abundance of food can be obtained, the charcoal will be found a good alternative to an improved condition will follow its use.

FARM NOTES.—According to the Census Bureau we have in this country \$100,000,000 invested in truck farming, not counting kitchen gardens. Some New Jersey farmers intend to select certain days to be known as "big days" to be devoted to killing hogs instead of driving them to east-others' fields. The best remedy yet known for the mange is a hen with a brood of chicks. It is not a cure, but it will be diligently searched over, and those who have tried the method claim that not only is the mange kept in check, but the chicks will start out foraging before it is fairly thick.

No matter where the sheep may be fed during the day they can be taught to come up readily at night. A single allowance of oats every evening with a little salt placed where they can help themselves, will be inducements. They also like a cool, dry place on which to sleep.

Dry plaster is excellent for the stables. It does not injure the feet of the animals, as it is not caustic. It will greatly aid in drying the loss of ammonia, and is very cheap. Mixed with four parts of its bulk of dry earth it is an excellent absorbent, and will greatly assist in keeping the stables and passages ways dry.

As a duck rarely has an established nest, but usually lays wherever she chances to be, they should be confined to a shed or small inclosure until 8 or 9 weeks in the season, when the eggs may be found; otherwise, most of them will be lost, as ducks are "early birds," and start out foraging before it is fairly thick.

How high would the pile be if all the grain grown in the country could be heaped has been calculated upon, but a small allowance of oats every evening with a little salt placed where they can help themselves, will be inducements. They also like a cool, dry place on which to sleep.

When horses come in at noon take off the harness and allow them ten minutes to cool down before feeding. Always examine a horse if any part of his harness rubs the skin, or is causing a sore. A horse may suffer a whole day's rest unless this precaution is taken. The harness is to the horse the better the animal will work.

SAN FRANCISCO STOCK SALES. SAN FRANCISCO, June 11, 1891. MORNING SESSION. Ophir..... 4 20 California..... 50c Mexican..... 2 70 Julia..... 1.50 R. & B..... 3 40 Challenge..... 4.50 Con. Va..... 9% Occidental..... 2.50 Savage..... 1 80 Andes..... 1.25 Potomac..... 4 00 Scorpion..... 2.50 Cholera..... 2 30 Benton..... 1.50 P. & M..... 2 20 B. Hill..... 2 20 Point..... 1 45 N. B. Isle..... 80c Jack..... 2 20 Erie..... 3 75 Imperial..... 1 50 Nevada..... 1 50 Kentucky..... 50c Belle Isle..... 75c Alpha..... 2 40 Belmont..... 2.50 Belcher..... 1 50 Con. Va..... 2.50 Confidence..... 5% N. Com..... 90c Graham..... 2 40 Crocker..... 1.50 Utah..... 75c Bodie..... 90c Bullion..... 2 50 Halver..... 1.50 Exchange..... 50c Syndicate..... 50c S. Belcher..... 70c Mono..... 45c Overman..... 2 20g Silver King..... 30c Justice..... 75c Navajo..... 1.50 Union..... 1 90 Weldon..... 50c Alta..... 75c Crocker..... 1.50

AFTERNOON SESSION. Ophir..... 4 30 Occidental..... 90c Mexican..... 2 65 Lady W..... 2.50 G. & C..... 1 80 Arizona..... 1 90 Best & B..... 3 25g 30 Scorpion..... 30c Savage..... 8 25 N. B. Isle..... 1.50 Cholera..... 2 55 Benton..... 1.50 P. & M..... 2 20 B. Hill..... 2 20 Point..... 1 45 N. B. Isle..... 80c Jack..... 2 20 Erie..... 3 75 Imperial..... 1 50 Nevada..... 1 50 Kentucky..... 50c Belle Isle..... 75c Alpha..... 2 40 Belmont..... 2.50 Belcher..... 1 50 Con. Va..... 2.50 Confidence..... 5% N. Com..... 90c Graham..... 2 40 Crocker..... 1.50 Utah..... 75c Bodie..... 90c Bullion..... 2 50 Halver..... 1.50 Exchange..... 50c Syndicate..... 50c S. Belcher..... 70c Mono..... 45c Overman..... 2 20g Silver King..... 30c Justice..... 75c Navajo..... 1.50 Union..... 1 90 Weldon..... 50c Alta..... 75c Crocker..... 1.50

Boils, pimples, bites, letter, ringworm and other similar affections caused by impure blood, are entirely cured by Hood's Sarsaparilla, which purifies, vitalizes and enriches the blood.

Miscellaneous. WE ARE READY TO USE FOR CATARRH. EVERYBODY USES IT. EVERY ONE FINDS A NEW USE.

ELLY'S CREAM BALM—Cleanses the Nasal Passages, Alleviates Pain and Inflammation, Heals the Sores, Restores Taste and Smell, and Cures Catarrh of the Throat.

Railroad Time Table. SOUTHERN PACIFIC COMPANY (PACIFIC SYSTEM) JUNE 7, 1891. Trains Leave and are Due to Arrive at Sacramento: LEAVE TRAINS RUN DAILY. ARRIVE

WASTE MONEY ON LAMP CHIMNEYS. "THE JEWEL TOP" which will stand the heat of any burner without breaking, for a trifle more? Ask your dealer for it and take no other.

SEE MY SPONGE? SISTERS DO AS I DID. DRESS YOUR SHOES WITH WOLF'S ACME BLACKING. ONCE A MONTH: OTHER DAYS, WASH THEM CLEAN WITH WET SPONGE.

LADIES, IT COSTS 1 cent a foot to change the appearance of old Furniture so completely that your husbands will think it is new. DIKRON. We make more porous paper than all the makers in this country combined.

For a Disordered Liver Try BEECHAM'S PILLS. 25cts. a Box. OF ALL DRUGGISTS.

ERRORS OF YOUTH corrected by NERVINO'S PILLS. CAST YOUR SICK OVER THIS.

FRIEND & TERRY Lumber Company. MAIN YARD AND OFFICE, 1210 SECOND STREET. BRANCH YARD, CORNER 27TH AND 3RD STREETS.

FISHING TACKLE. EVERY VARIETY, GUNS, RIFLES, FISHES, FIXED ARMOR, CUTLERY and Sporting Material of every description.

Capay Valley Land Company. CAPAY VALLEY! The Earliest Fruit Land in the State. Equal in All Respects to the Famous Vaca Valley, Which it Adjoins. UNPRECEDENTED TERMS. INTEREST ONLY FOR FIVE YEARS AT 7 PER CENT.

Capay Valley is situated in Yolo County, about 90 miles by rail from San Francisco, and is traversed in its entire length by the Woodland, Capay and Clear Lake Railroad, the distance from Esparto to Rumsey being 21 miles.

The Capay Valley Land Company is offering the most fertile lands in this beautiful valley upon terms which enable the purchaser to pay for the land out of its own product, viz.: Interest only for five years at 7 per cent. The only condition imposed is, that a reasonable proportion of the land purchased shall be planted to fruit trees or vines. Land may be bought without this condition on payment of 20 per cent. cash and remaining 80 per cent. at the end of five years, with interest annually in advance at 7 per cent. The various tracts owned by the Capay Valley Land Company have been subdivided into 10 and 20-acre lots, which are for sale at prices varying from \$50 to \$150 per acre. Similar unimproved land in Vaca Valley has recently been sold at \$400 and \$500 per acre.

FOR MAPS AND ALL INFORMATION REGARDING THE CAPAY VALLEY LANDS, APPLY TO OR ADDRESS WM. M. MILLS, Fourth and Townsend Streets, SAN FRANCISCO.

W. L. DOUGLAS \$3 SHOE. VIGOR OF MEN. CAPITAL PHARMACY. J. S. O'CALLAGHAN, Druggist and Apothecary, Telephone 150.

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA, in and for the County of SAN FRANCISCO, in the matter of the estate of WILLIAM WINTER, deceased.

Real Estate, Etc. ARARE OPPORTUNITY. Good Agricultural Land for \$10 to \$20 per Acre.

Proposals. SEaled Proposals. ON MONDAY, JUNE 29, 1891, BETWEEN the hours of 10 and 2 P. M., proposals will be received by the City Board of Education at the office of the Secretary, room 10, Odd Fellows Temple, for:

Too much stress cannot be laid upon the great advantage to the fruit-grower of being in an early locality. In most cases it makes the difference between success and failure. The industrious orchardist of Capay Valley may rest assured that he will derive all the benefits gained by the first fruit shipments of the season, and that 20 acres of this rich land, when the trees are in bearing, will yield a handsome and assured income.

The Capay Valley Land Company has an agent residing in the valley, whose duty it is to show the various tracts to land seekers.

Four townships have been laid out in different points in the valley, viz.: Esparto, Cadenasso, Guinda and Rumsey. Town lots may now be purchased at reasonable prices and on easy terms.

The enterprising and flourishing town of Esparto is situated at the lower end of the valley, and \$125,000 worth of substantial buildings have already been erected, including a fine four-story brick hotel, two large brick blocks and waterworks, with pipes laid in the streets, besides extensive warehouses and numerous residences.

Postoffices have also been established at Guinda and Rumsey. This latter place, situated at the head of the valley, is the present terminus of the railroad. The comfortable little hotel makes excellent quarters for hunters as well as land-seekers.

The advantages enjoyed by the settler in Capay Valley may be thus concisely summed up:

A soil of great fertility, yielding bountifully of every crop. A soil and climate which will ripen all kinds of fruit & vegetables earlier than anywhere else in the State.

A location that is central and close to markets. Railroad communication which enables shipments to be made quickly and cheaply. Lands which are sold cheaper and on better terms than anywhere else in the State.

Business Cards. DR. PENDERY & BAINBRIDGE. PHYSICIANS AND SURGEONS. OFFICE Postoffice Building, corner Fourth and K streets. C. SUTER. THIRTEENTH AND J STREETS, MANUFACTURER of wire doors, windows and furniture, which are in stock, also, made to order.

PROPOSALS. SEaled Proposals. ON MONDAY, JUNE 29, 1891, BETWEEN the hours of 10 and 2 P. M., proposals will be received by the City Board of Education at the office of the Secretary, room 10, Odd Fellows Temple, for:

Attorneys-at-Law. WM. M. MILLS. A. J. & ELWOOD BRUNNE. CHAUNCEY R. DENX. S. SOLON HOLL. LAWYERS-OFFICES, 250 FIFTH ST.

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