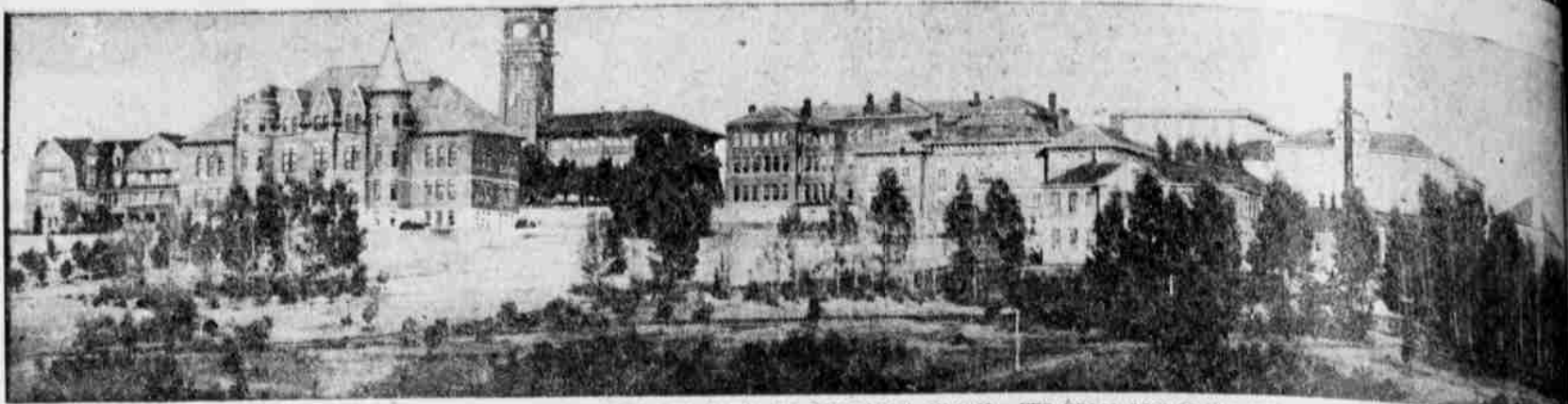


The Agricultural College Is a Valuable Friend to the Farmers

Bulletins and News Notes From the Staff at Pullman.



VIEW OF WASHINGTON AGRICULTURAL COLLEGE AT PULLMAN, WASH.—ITS SOLE AIM IS TO AID AGRICULTURISTS.

Cause and Remedy for Hens Laying Soft-Shellled Eggs

THE frequent laying of soft-shelled eggs occasions a considerable market loss in the Spring of the year. Mrs. Whitaker, of the poultry department of the State College of Washington, offers the following explanation of the causes and the remedies:

The yolk of the egg is fully formed when it breaks from the hen's ovary and drops into the funnel shaped mouth of the oviduct. It is at this point that fertilization of the egg takes place, probably within a few minutes of the breaking loose of the yolk, and in about three hours' time the formation of the thicker albumen is completed.

The next section of the oviduct secretes the shell membrane which ordinarily requires about three hours. By the expansion and contraction of the walls of the oviduct, the egg is forced forward into the shell gland, where the lime of the egg is deposited, and within 12 to 24 hours the egg is laid. One can readily see that anything that would have a tendency to make the egg pass too rapidly through the lower two-thirds of the oviduct would cause the hen to lay soft-shelled eggs.

The first and usual cause of soft-shelled eggs is that the bird is too fat. The muscular movement of the oviduct is hindered by layers of fat, and instead of the egg being controlled by firm muscles it merely slips through a flabby mass without getting its shell on.

The difficulty will vanish if the birds are made to scratch hard in a clean, dry straw litter for all their grain, and the ration fed is not over-fattening. Sprouted oats will be a valuable food, as they are less fattening than either wheat or corn. In some cases it might be advisable for a few days to omit all mashes, especially moist mashes, from the ration.

The second source of soft-shelled eggs is lack of lime in the hen's ration. In this case the shell-secreting part of the oviduct fails to do its work because of lack of material.

Clam shell is not so readily soluble as oyster shell. What is commercially known as beach shell is preferable to clam shell. It is claimed by some poultrymen that the use of a limestone grit also helps to supply shell material to the hen. It is often recommended that old plaster be broken up and thrown in a box in the pen for birds to pick at as a source of lime.

The third cause of soft-shelled eggs is the forcing of hens for too frequent egg production. A second yolk breaks off from the ovary and drops into the funnel of the oviduct, and the first one is forced too rapidly on its way for it to be completely formed when laid.

The fourth cause of soft-shelled eggs comes from scouring, that is, from feeding a too loosening ration to your birds. Beets or mangels will sometimes produce this result. The droppings, normally, should be a dark slate or dull black color, firm enough to maintain a spiral shape as seen on the dropping boards.

The Honest Merchant.

"No," said the old gentleman sternly, "I will not do it. Never have I sold anything by false representations and I will not begin now."

For a moment he was silent and the clerk who stood before him could see that the better nature of his employer was fighting strongly for the right.

"No," said the old man again, "I will not do it. It is an inferior grade of shoe and I will never pass it off as anything better. Mark it 'A Shoe Fit for a Queen' and put in in the window. A queen does not have to do much walking."

A page of interesting items from the Oregon Agricultural College at Corvallis will alternate in the farm weekly with a page of news notes from the Washington State College at Pullman. This will afford an interchange of views from the two big agricultural colleges of the Northwest that should prove of benefit to the reader, for the institutions deal with similar problems.

Growing Field Peas on a Wheat Farm

BY GEORGE SEVERANCE.

FIELD peas have long been a standard crop among the dairymen of Western Washington, where the rainfall is abundant, but very few of the grain farmers of Eastern Washington realize that they may be grown successfully in the moister parts of Eastern Washington and Northern Idaho, or know their real value. The numerous trials with field peas on the Experiment Station Farm at Pullman have seemed to justify their very general introduction on the moister soils of the wheat belt.

There are several reasons for introducing this crop. Nearly all the older wheat soils of Washington are becoming more or less depleted in nitrogen. This depletion is strikingly shown by the ranker growth and darker color of grain wherever manure has been dropped or where an old fence has been broken up. Like alfalfa and clover, peas add nitrogen to the soil through the action of certain bacteria storing the free nitrogen of the air in nodules on the roots of the peas.

Upon the decay of the roots this stored nitrogen comes into available form for succeeding crops. Peas have the advantage over clover and alfalfa, as a soil renovating crop in wheat farming in that they may be grown during the year of rest from wheat, while clover or alfalfa must occupy the land two or three years if grown profitably. They are inferior to clover and alfalfa as a humus producing crop, where the tops are removed, for the root system of peas is not nearly so extensive as of clover or alfalfa and will add little if any more humus to the soil than is broken down in the soil during their growth.

Giving Stability.

That the more general introduction of dairying into our system of agriculture would give stability by distributing our risks, helping to maintain our soil in a high state of fertility, and developing a more intensive system of agriculture, is generally recognized; but one of the greatest drawbacks on most wheat farms is the shortage of feed during July, August and September, even though alfalfa is grown for pasture. Peas are unsurpassed as a soiling food for cows and will supply this need from about July first to the middle or latter part of August, after which corn that may be grown on otherwise idle summerfallow, will supply extra feed the balance of the dry period.

Peas grown with oats will produce heavy yields of hay, rich in protein and much superior to wheat or oat hay for cattle, sheep or colts. Peas resemble alfalfa and clover in feeding quality, but offer the advantage of producing a full crop of hay in about three months from seeding, while the land must be set aside two years for a full crop of clover or alfalfa.

Swine production offers exceptional remuneration to the extent that hogs may be used to pick up the waste of our grain fields, but with no other provision for Summer feed, Spring litters will not attain satisfactory size during one season. If alfalfa pasture is used to start them on, it becomes pretty dry long before the grain fields are ready to turn into. A patch of peas will tide over this period and keep the pigs growing rapidly. With a field of corn to turn into for finishing in the Fall they will go onto the market in excellent condition.

With land values in many cases ranging from \$75 to \$100 per acre, it becomes increasingly important that we discover some crops that will enable us to keep the land producing all the time. Peas may be grown on the better parts of the summerfallow, thus aiding in the more complete utilization of capital invested.

Pointers on Growing.

1. Field peas will produce profitable crops of hay or seed on good average land, in the moister part of our wheat belt.
2. Peas are annuals and may take the place of the summerfallow where there is a fair rainfall.
3. Peas are nitrogen gatherers, hence will increase the nitrogen content of the soil, but will not increase the humus of

the soil like clover or alfalfa because the root growth is too scant.

4. Peas will aid in keeping more livestock by furnishing green feed for soiling during July and August or grain to be hogged off, or high-class hay for Winter feed.

5. To prepare for peas plow deep in the Fall, leave rough over Winter, prepare deep, mellow seed bed as soon as Spring opens.

6. For seed sow as early as ground can be prepared, about two bushels per acre with grain drill, seeding three to five inches deep.

7. If seed is not desired sow one bushel oats per acre among the peas one week later, seeding shallow to avoid digging up the peas.

8. Begin using peas for soiling (green forage) when first pods are full grown.

9. Begin pasturing off with hogs when peas are nearly all well formed.

10. Cut for hay when the oats are in the stiff dough and first pea pods are turning yellow, cure and handle like clover.

11. Cut for seed when the bulk of the peas are hard.

12. A good crop of peas and oats on good land, well prepared, will yield one and one-half to two and one-half tons of cured hay per acre. A good crop of seed will yield 15 to 30 bushels per acre.

13. Peas leave the soil in nice condition to prepare for wheat without plowing.

Distillation Experiment in Douglas Fir Is Begun

THE District Forester at Portland, Or., announces that the forest service has just begun, at their semi-commercial distillation plant at the University of Washington, Seattle, an exhaustive series of experiments in an endeavor to settle, for all time, the feasibility of distilling, not only Douglas fir sawmill waste, but also Douglas fir stumps.

For many years it has been advocated, in the Douglas fir region, that the cost of land clearing could be reduced by utilizing stumps through a process of distillation, and that an additional revenue could be obtained by disposing of mill waste also by distillation. In spite of the fact that the experimental work thus far done has indicated but little or no margin for profit, there is still a somewhat general feeling that such distillation could be made to pay under the right conditions.

The forest service proposes to experiment not only with Douglas fir mill waste and stumps, but also with Western yellow pine. Preliminary experiments on the latter indicate that the stumps and waste of this species contain a higher percentage of valuable products than Douglas fir.

The Origin of Onyx.

When waters charged with carbonate of calcium derived from limestone are allowed to evaporate they deposit their load in the form of sinter, or tufa. This process can be observed at many thermal and "petrifying" springs and also in the formation of stalactites and stalagmites in limestone caverns. In this way large masses of compact carbonate are formed, some of them of great beauty.

The so-called "onyx marbles," of which the Mexican "onyx" is a familiar example, are formed in this way. Some rock of this class is stalagmitic, in caverns, and some of it is formed by springs. Its variations in color and texture, to which its ornamental character is largely due, are commonly produced by impurities or inclusions, such as oxide of iron, or even mud and clay.—Pittsburg Dispatch.

Didn't Like the Sign.

A Western horseman tells of a jockey at Windsor, across the line from Detroit, who was recently indisposed.

"If I don't get rid of this cold soon," said the youngster, "I'll be a dead one."

"Didn't you see Dr. Spinks, as I told you?" asked the friend.

"No. The sign on his door said '10 to 1,' and I wasn't going to monkey with a long shot like that."

Explaining the Two-Fold Uses of Manure Spreaders

THE following is taken from the Management Monthly, of the States Department of Agriculture, and will be of interest to any farmer or state who are coming to use this important agricultural implement.

Some of the implements which are found on almost every farm are used for very short periods of each year. The length of service may not include more than three or four weeks. For the remaining part of the year such implements either remain in the open, or they are given the best of care in a first-class implement shed.

Where they are exposed to the weather a rapid decline in value is the result. Investigations have proven that the depreciation for the manure spreader is approximately 11.67 per cent annually. It is to be noted that this machine is required to carry a by-product which contains more or less moisture, a part of the depreciation is undoubtedly due to the decay of the wood in the framework.

If this and similar pieces could be utilized to a greater extent they would last almost as long, and in doing the additional work the yearly charge in connection with operation could be met more fully or completely. Ordinarily the manure spreader is in use at seasons of the year when the field work is not demanding attention. While the harvest is in progress it will be found idle, hence it is available for other work.

In districts where field roots such as mangolds, sugar beets, or turnips are grown, the manure spreader may serve as a wagon in transferring the crop from the field to the root cellar or pit. A simple adjustment will enable the operator to save considerable time, as well as the task of unloading with the aid of a horse.

The cylinder or spreader is first removed from the end of the box and a suitable end board is set in place, the latter being held by an iron bar or rod. When the load is taken to the cellar, the end board can be lifted out readily and the roots may be rolled into the tray merely by putting on the crank which connects with the apron shaft and turning by hand until the entire lot has been discharged.

It requires only a few moments to deliver the load. If the farmer does not have wagons enough to move the crop readily, this difficulty may be overcome by following the suggestion which has been offered.

The needle of the thorny cactus is now being used in phonographs as a substitute for the metal point on the transmitter. It produces a softer and more natural tone.

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