Washington State College is the Friend of the Farmer

Bulletins and News Notes From the Staff at Pullman.

View of Washington Agricultural College, Pullman, Washin gton, the Sole Aim of Which Is to Aid Agriculturists.

ORCHARD POLLINATION.

THE Experiment Station at Pullman has been engaged for several seasons in a study of orchard pollination to determine which varieties of apples are self sterile and need to be planted near other varieties in order to be fruitful and which, if any, can successfully pollinate their own blossoms. Tests have also been made with a number of the more important varieties to show what combinations give the best results in cross pollination. Most of these studies have been carried on at Pullman, but this spring considerable work was done in several orchards at Opportunity, Washington, and the results may be of interest.

Nineteen varieties were tested for self sterility. Rome Beauty and Baldwin were the only varieties tested which gave any promise of being able to produce a crop without cross pollination, and these set much less fruit than when crossed. Ben Davis, Wealthy and Yellow Newtown were slightly self fertile. King Davis, Delicious, Jonathan, Wagener, Winter King, Spitzenburg, Yellow Transparent, Rhode Island Greening and Winesap failed to produce any fruit from self pollinated blossoms.

Rome Beauty, McIntosh, Delicious, Spitzenburg, Ben Davis and Wagener all gave good results as pollinizers of Jonathan. Winter Banana and Yellow Newtown were also crossed successfully with Jonathan, but gave fewer fruits than the other varieties. Jonathan, Delicious and Ben Davis crossed most readily with Wagener and Rome also gave some fruit. Wagener, Delicious, Jonathan and Winter Banana gave the best results with Spitzenburg, while Yellow Newtown and Ben Davis gave quite good results, and Rome, McIntosh and Winesap were found to cross pollinate the Spitzenberg successfully. Rome Beauty was most successfully pollenized by the Wagener, though this is not a very desirable combination in orchard practice as the Wagener is an early bloomer and the Rome blossoms rather late. Jonathan, Delicious, Ben Davis and Spitzenburg all gave very good results as pollinizers for the Rome.

In most cases it has been found that varieties which blossom at the same time will cross pollinate successfully and, as a rule, set more fruit than the same varieties when self pollinated. Winesap and Stayman Winesap, however, have failed to give good results as pollinizers on any of the varieties tested. The Experiment Station has a bulletin in preparation giving the results in detail of this and other polination tests.

IMPORTANCE OF LIVE STOCK AND CROP ROTATION.

THE importance of keeping live stock and of practicing a rotation of crops in maintaining the producing capacity of the soil is becoming more apparent each year on the State College farm. Three plots show this fact very strikingly. One plot has been growing wheat continually every year since 1899 without any manure or other fertilizer being applied. The second plot has grown wheat every year since 1899, but has had a light application of manure plowed under each year. The third plot has had no manure applied and has grown a crop every year, but a rotation of wheat one year, oats one year, clover two years and corn one year has been carried on since 1899, the 1914 crop being wheat.

The important lesson to be observed at this time is that the plot that has grown wheat continually without manure promises a very low yield. To the observer, the plot that has been manured and the plot that has not been manured, but has grown a rotation, show an equally good growth of wheat at this time and show a better growth than they did fifteen years ago.

Maintaining Fertility.

The plots show (1) that the fertility of the soil may be maintained either through the use of barnyard manure or by a rotation of crops that includes clover or some equally good soil improving crop; (2 that it is kept in a high state of fertility. It is not necessary to practice summer fallowing with the rainfall received at Pullman, either to give the land a rest or to conserve the moisture of two seasons for the growth of one crop. If the soil is sufficiently fertile, one inch of rainfall may carry more food into the plants than two inches of rainfall may dissolve and carry to the plants from a very poor soil. This is beginning to be very apparent in the field practice on the college farm. Except in small experimental plots, summer fallowing is no longer practiced on the state farm, but a rotation is followed that involves cropping annually with clover, alfalfa and peas grown periodically to improve the soil and corn to serve as a soil cleaning crop (Corn is a soil cleaning crop only when it is properly cultivated—corn itself has no effect in cleaning the soil).

Increased Production.

One twelve-acre field lying on a south slope was in summer fallow in 1904. It has grown a crop every year since. Every five years a well cultivated corn crop has helped to keep the soil in good tilth and free from weeds, while peas and clover, interspersed at about like periods, have served to keep up the supply of nitrogen and humus. The field now produces much better than when it was first taken over by the college. In 1911 it yielded forty-seven bushels of wheat per acre. In 1912 it yielded forty bushels of peas per acre. In 1913 it yielded forty-six bushels of wheat per acre. At present there is an excellent crop of oats growing on this field that will produce a very satisfactory yield if the season is fairly normal from now to harvest.

The rich color and rank growth of nearly all crops on the farm are beginning to show the effect of the use of barnyard manure and the growing of peas, alfalfa and clover. One of the fields last purchased has not yet received a treatment of clover or alfalfa and the yellower, more spindling growth of the barley shows a striking contrast to the ranker growth on the other fields.

The importance of maintaining a high state of fertility applies equally well to the semi-arid regions and to the moist regions of Western Washington. While it would be impossible to grow a good crop annually with the very limited rainfall of Central Washington, it is quite possible for the low rainfall to be much more efficient with plenty of fertility available to dissolve and carry to the plants. The number of crop failures can be very materially reduced and the average fields greatly increased by keeping more live stock, saving and aplying the manure carefully and by growing soil improving crops to keep up the fertility. Many sections of Western Washington might grow two crops per year or three crops in two years where they are now scarcely able to grow one good crop, if the soil were kept in a higher state of fertility.

VETERINARY SCIENCE.

THE Department of Veterinary Science of the State College is doing splendid work among the students of the college, judging from the report which Dr. Nelson, head of the department, recently made to President Bryan.

In this report the following statements occurred: This year there have been ten students enrolled in the four year course, and 26 in the three-year course, a total of 36, the largest enrollment that has ever been in the department.

There has also been taught during the year in the department 439 persons, deducting 149 duplications, where students have been in more than one class, 290 individuals having been taught in the department.

The popular work given by the department is advanced physiology to young women of the Department of Domestic Science, and the work in diseases and accidents of animals, simple remedies and sanitation, given to agricultural, horticultural and other students.

This is the kind of work that makes a department valuable to the state.

On March 11, 1914, four months before graduation, Thomas Elliott, a Senior student in the Department of Veterinary Science of the State College, took the United States examination for veterinarian in the Philippine service. A few weeks ago, Mr. Elliott received information from the Civil Service Commissioner that he had passed the examination and would be subject to appointment, as soon as the commission received authentic information that he had graduated. The position to which the passing of this examination makes Mr. Elliott eligible pays $1700.00. Mr. Elliott is to be congratulated on being able to pass as difficult an examination as the United States Commission gives for eligibility to this position, four months before he graduates.

FEEDING TURKEYS.

WHETHER one is feeding incubator hatched turkeys or turkeys hatched from the hen, the first feed should be stale bread moistened with sweet milk, chopped onion tops, grit and pure water. At this time the poults are nearly three days old. About three days later the bread is changed gradually to commercial chick feed cooked with curds and lettuce. Three or four days later there is added to this feed dry bran and beef scraps—five parts bran to one part scrap, mixed and placed within their reach in shallow boxes, which is kept before them all the time until they become five months of age. A convenient hopper for this dry bran feeding is a box four feet long, six inches wide and six inches deep, with a strip two inches wide nailed lengthwise and in the middle across the top. Supply this hopper daily just enough for a single day's feed, all that the poults will eat. Fresh green stuff, such as lettuce, kale and cabbage is fed liberally daily, morning, noon and evening. Also sweet milk and fresh water. The drinking vessels are washed clean daily. A box of gravel, cracked shells and a dust bath are kept in their nursery.

From the time they pick up oats, corn or wheat, their grain ration should consist of equal parts of these grains, mixed and scattered in the run-way three times daily, as much and no more than they will eat. Two weeks before these turkeys are to be marketed for Christmas trade, they are placed in roomy pens, containing four birds each, and are fed, aside from the grain and bran ration mentioned above, the following fattening ration three times daily all they will eat up clean; the change, however, must be made gradually: six parts middlings, two parts beef scraps. This is weighed out and moistened with milk. The green feed fed as before.

NEW HALL FOUNDED.

THE founding of the James Wilson Hall at the State College, June 11, marked an epoch in agricultural development in the Northwest. Henry Wallace, the veteran editor of "Wallace's Farmer," Des Moines, Iowa, in an eloquent address, paid tribute to the noble character and earnest devotion to agricultural pursuits of the Hon. James Wilson, ex-Secretary of the United States Department of Agriculture, and in whose honor the building is named.

The unveiling of a fine bronze bust of James Wilson was one of the features of the exercises. The presentation was made by D. S. Brodie, of the United States Department of Agriculture, the first graduate of the Agricultural Department of the State College to receive a degree from the college.

The corner-stone exercises were conducted by Judge Herman D. Crow, chief justice of the supreme court. Mr. Crow represented His Excellency, Governor Ernest Lister. A special train from Spokane brought 125 people representing the Chamber of Commerce, educational, business and railway interests.

Miss Rhoda M. White, dean of women at the State College, is making a tour through Idaho, Oregon and Washington for the purpose of securing speakers for the Vocational Congress, which will meet at the College next year. Women in rural localities who have made a success of business in any line, as farming, newspaper work, banking, etc., will confer a favor if they will communicate with Miss White.

SEED FOR TREES.

It is seldom possible to plant tree seeds where the trees are expected to grow permanently. Many trees grow very well for the first three or four years, but they can be obtained better in a nursery, and then transplanted.

The seed of the Russian wild olive may possibly be obtained from Barteldes Seed Company, of Lawrence, Kansas. This firm makes a practice of dealing in tree seeds more particularly than almost any other seed house in the United States.

The Russian olive, however, is not a very popular plant in most parts of the United States, and perhaps it be necessary for you to buy young plants grown from cuttings. The seeds may be treated either by freezing in moist sand during the winter, or by pouring hot water over the seed, and letting it stand for about twelve hours before planting. In order to grow a good, solid hedge, or windbreak formation of this plant, young trees should be set about two and one-half to three feet apart in the row. The best form of windbreak, however, is not made by a solid hedge row formation, but by a strip of timber along the windward side of the orchard land that you seek to protect.

The black locust seed may best be sprouted by pouring boiling hot water over the seed and letting the seed stand in enough water to just cover them for about twelve hours, then draining the water away and planting without drying. You will have the best success if you plant the seed in the nursery row and transplant the young locust trees at one year old. The trees may be set as close as three feet apart to develop a hedge formation. The better plan, however, is to set several rows six or eight feet apart, and the trees three to four feet apart in the row.