

carbolic acid are preferable to kerosene in this poultry house as a cleaner. That a certain degree of confinement is necessary for fowls. That too close confinement will cause them to cease laying. Too much freedom will cause a loss of flesh. The poultry house should be situated on rolling ground. The building thoroughly white washed. On the floor should be a foot of dry dirt.

#### HOW TO MAKE HENS LAY.

Tells of the composition of an egg. Oyster shells are the best for forming the shell, as are also roasted shells, or scraps of old plaster. Albumen is found in pure state in sweet milk. Corn contains oil. In winter feed animal food in abundance, also shell material. In spring provide a dry yard and fresh water. In summer provide shady spots and plenty of cool water.

#### DISEASES OF FOWLS.

Gapes—Cause, foul water and wet places of roosting. This is small worms in the wind-pipe and these drop on the lungs and suffocate the chicken. The "runs" for the chickens should be frequently plowed, and if potatoes are cultivated it will be better. This will cure the gapes.

Roop—Hard to cure, very contagious. Better kill one or two chicks of the first ones affected.

In marketing fowls the farmer must bring the fattest and healthiest. The best plan for fattening is to have a movable coop, and feed grain, well wetted with milk. Three weeks will be sufficient to fatten a chicken.

Mr. Carter, of Wells station, said he wanted to know which was the best breed of fowls. Did not agree that a slat five or six inches wide was the best roost. That his chickens preferred to roost on limbs of trees.

Mr. Berchthold said he first kept Buff Cochins. They are a clumsy bird, and they do not lay many eggs and want to set too much. Next he tried Black Spanish. They are a very satisfactory fowl, but are non setters; that you have to have another breed to hatch the eggs. Next he tried the Brown Leghorn. For general purposes, as a table fowl or also a layer, it is to be recommended. The variety he now has is the Wyandottes, and a cross between the Hamburgs and Dark Brahma. They are a fine looking fowl. They are good feeders, are patient mothers, and best of all, lay when no other chickens do, that is, through the winter months. He recommends this variety. That there must be something wrong with the chicken house. That chickens do not like a draughty house. That experiment has proven that the flat slat is cleaner and preferred by the chickens. That more trouble comes from chickens being troubled with lice than almost any other disease. That plenty of road dust is the remedy. Mr. Carter said that he had adopted the White Leghorn as the best chicken.

#### AFTERNOON SESSION.

Hon. E. Hatch, of McCoy, occupied the chair. E. C. Pentland was elected secretary.

A paper on "Mixed Farming" was read by Hon. F. S. Powell, of Monmouth.

He recited the fact that the mixed farming was very little practiced on this coast and it has not been necessary; but the time has come when we can no longer compete with the cheap labor of Europe. The time when the farmer could live without hard labor has passed. We must make up our minds to face the new condition of things. That our wheat, oats and other cereals should be changed into live stock. That by so doing we will not only supply our home markets but enrich our soils at the same time.

Mr. T. Paulson said he believed in mixed farming, and practiced it himself. That he had been told at this Institute that farmers should engage in specialties. That in manufacturing this rule is followed, and why not among the farmers. That if one man raises nothing but currants, he could produce it at a better profit than the mixed farmer, but he would not be as certain of profit if the currant market were supplied he would be ruined. Mr. Paulson depreciated the plan of farmers going in debt. That at this season of the year if a farmer has some sheep he can soon have some money. That when the farmer has only wheat he gets money but once a year and is "carried" the rest of the year. Spoke of early days of Oregon when wheat farmers did not have anything but wheat.

D. O. Quick, of Suver, was in favor of mixed farming. That he raised last year 10 acres of corn and eighteen acres of buckwheat, and raised quite a number sacks of potatoes. That buckwheat loosens up the soil, and does not impoverish it. That he believes mixed farming pays. Showed samples of ensilage from his silo at Suver.

Question asked. Where clover and grass would come in, in mixed farming?

Ans. That he would put that into ensilage as he had the corn. Said that Con'l. Cornelious had put up oats, wheat, corn, clover and smart weed into ensilage.

Prof. W. H. Hull said he was on the farm of O. P. Shadden & Son, of Eugene. That he was told that the prunes in their orchard of 10,000 trees could all be sold for the sum of 12 1/2 cents a pound, and it did seem that there was profit in it, and that a Chicago dealer said that if every farmer in the Willamette valley were to engage in the business the demand would not be more than supplied.

Mr. Quick said that a gentleman at Vancouver had been raising prunes for the past 18 years and the profit from three or four acres of prunes was about \$3000 a year. That the reason why the French prunes are selling at a higher price, is because the French prunes are graded.

Mr. French of the college at Corvallis said that not only was fruit raising a valuable part of mixed farming but that it should also include poultry and butter making. That Oregon farmers should not have to buy either bacon, butter or eggs.

Prof. Bristow, of agricultural college said that this matter of mixed farming might be carried too far. That a man who farms everything will not succeed any better than the business man who tries to do everything. That whatever the farmer attempts to do he should make a specialty of it. That if he engages in prune raising he should study prunes.

Mr. E. Gwinn, of Dixie, said he did not agree with the gentleman last on the floor. That when you farm you must mix it all up. That he raises hogs and cattle and chickens, and makes butter, and now has plenty of money to "carry" himself. That the reason why he found this kind of farming paid was that when he tried the other he failed and he has tried mixed farming and succeeded. That his wife sent \$100 worth of eggs to Portland and he has sold over \$400 worth of eggs and poultry. Had looked around and seen that the successful men pruned their own orchards and broke their own horses and drove their own teams, and in fact did everything.

Mr. Paulson said that clover was the very best for ensilage.

Mr. Quick asked why more clover was not raised in Polk county?

A. W. Lucas said that as he understands mixed farming, he did not find it to pay. That when he raised wheat and oats on the ground it did not succeed. That he favored diversified farming. That to engage in diversified farming, the farmer is dependent upon locality. He said that he had heard stabs given the raising of wheat, arguing that wheat did not pay. He had made careful calculations and he had found that it does pay but not very largely. That he had just come from the prune country of California and those farmers there were more ragged than the Oregon farmer. Wheat pays better than fruit. While he favored diversified farming, he did not favor the Oregon farmer giving up wheat raising until the circumstances were more encouraging. Stick to the raising of wheat, which, while it does not pay very largely, it does pay. That he does not let his summer fallow lie idle. That his sheep are enriching his land, and that on land that he raised wheat of 45 pounds to the bushel, 30 years ago and now he raises more to the acre, and it weighs 60 pounds to the bushel. That we must not stop raising wheat. That it is a sure crop, and fairly remunerative.

Prof. Bristow, of the Agricultural College, delivered an address on

#### BEE KEEPING.

That the important question with every industry, and one which those interested are trying to reach is; does it pay? That if you pay attention to a thing it will pay, but if you neglect it, it will not. That if you were to buy an animal this year which would feed itself until next year, and sell at the end of the year at a profit, you would say it was a good investment. Bees will do this. The parent swarm doubles in one year. It feeds both swarms, and gives you a nice return of honey. That bees also are of advantage to fructify vegetation. That experiments have proven that they are of great value in the fruit orchard. Explains the life of the swarm. That only one queen bee is in a hive. That a swarm of bees is entirely mothered by this one queen. A swarm is composed of from 25,000 to 50,000 bees. That the queen lays from 2,000 to 2,500 eggs a day, and continues to do this all her life, which is about four years. The drone is next described. They do no work, make no honey, they are the guards and mates of the queen. There are from 20,000 to 30,000 working bees. Every working

bee is an undeveloped queen bee. The smaller cell is the cause of this. They do all the work. That they do not live longer than six weeks. That this can be tested by putting an Italian queen in a hive of black bees. Working bees do not die of old age, but work themselves to death. That a bee has a sting but never uses it except near the hive, and that to kill drones. That the bees need the sting to protect the honey, not only from man, but animals. That honey is secreted in flowers, and gathered by the bees and carried to their hive where it is deposited. The bee bread is carried on the legs of the bees, and is used for food by the bees in winter. The comb is not made the same as bee bread. That when bees swarm, they are not cross, and the reason is because the bees are full of honey. That by some process this digests and becomes wax. Sometimes a queen dies. In this case a queen must be reproduced. It is done by joining two or three cells, and feeding with royal jelly, and in sixteen days a new queen will be born. A worker is born in twenty-one and drones in twenty-four days. Who should keep bees is an important subject. That the bee-keeper should learn the business. The best location is along the river where cotton wood and other trees grow, also white clover. Do not buy too many bees. One good colony in the spring, in a common black log gum, and get black bees. They are cheaper for an experiment. Get a swarm with a queen about a year of age. It will do the best. Favors the movable comb hive and the Italian bees, which may be purchased as soon as experience has been gained. Bees will travel from four to six miles for honey. That bees do not hurt fruit or fruit blossoms.

Mr. Hatch asked whether spraying orchards would interfere with bees.

Mr. Lake assumed that if spraying was done at the right season there is no conflict between spraying and the gathering of honey by the bees.

Prof. Lake asked whether it was not true that just as the bees swarmed there were three or more queens, and yet it was stated that but one queen lives at the same time.

Prof. Bristow stated that this was the case for four or five minutes only. Spoke of the enemy of bees. That the moth is the least damaging, the ant the next, and the field-mouse the worst.

#### SUGAR BEET SEED.

Prof. Lake said that the Agricultural college would furnish sugar beet seed to farmers and that they will have the product examined and analyzed at the laboratory in the Agricultural college, free of cost. Adjourned.

#### EVENING SESSION.

Called to order by A. J. Goodman. Some excellent music was performed by Cressy's Orchestra.

An excellent paper was then read on "Horticulture in Oregon," by O. P. S. Plummer, of Portland. Spoke of the interest he took in this work: That he hoped to see the fruit industry developed. That fruit raising pays in Oregon, and has paid, when the trees were well taken care of. That 1000 Bartlett pear trees will yield a better return than even better fruit of a greater variety. That large lots of fruit are in demand. That cherries of Oregon cannot be excelled. That California only can excel Oregon in the variety of fruit. That in the specialties of Oregon, we are ahead of the world. Oregon can not be excelled in the production of prunes. That California cannot raise the Italian prune, and Oregon seems to be their home. Prunes are graded according to the size and the larger the prune the higher the price. Told of the method of raising prunes and working the crop in California. That there is much labor employed. That the best dryer he has used is the Jory dryer, made in Salem. That of all the varieties of prunes the Italian is the most important to Oregon, and that we cannot overdo the production. That while we do not, as in California, have to irrigate, yet our orchards need to be plowed and pruned and taken care of. Codlin moths, green aphids and other fruit pests were exhibited. Spoke of the birds which are injurious and those of value. Opposed the English Sparrow. Spoke of the Oregon State Board of Horticulture. That the bulletins issued by this board are given away upon application. That spraying of orchards has become indispensable, and the suggestions of the board are of great value. Last year the output of fruit in California, was \$13,000,000, and California is planting more trees and is not discouraged.

Song: Nancy Lee, by Miss Essie Tatom, accompanied by Miss Katie Wheeler. Miss Tatom exhibited a clear flexible voice and a pleasing articulation.

OUR BOYS AND GIRLS VS. OUR STOCK

W. N. Hull, of the State Agricultural College, Corvallis, Oregon, said; Our

children are the most precious things we possess. Our stock has a money value, but in this christian land, the boys and girls are worthily loved, not for their money value, not specially because they are one of our bone and flesh of our flesh, but because of the immeasurable possibilities wrapped up in them, and because they have souls which with ours will live for ever. A hog is worth fifty dollars, but what is the baby worth? Maamma's weenty teenty little darling. Oh! the pangs which brought the little one out of the Nowhere into the Here are soon forgotten and a new love springs up in many hearts and twines around the baby. The brain of the child just born, and for some weeks thereafter is a bit of jelly or curd, as insensate and inert as a dutch cheese or plumb pudding. But it is soon shot through and through with impressions, sensations and influences which gradually transform it from a thing of dough to a battery of power. The new child is a mere automatic suction pump,

"The infant in the night  
Crying for a light,  
And has no language but a cry."

But it changes through the years of manhood into a thunderbolt. Intelligence begins to beam in the eye, the passions to assert themselves, among which love, enkindled by the mother can sit triumphant.

The infant, as an animal, is the most helpless of all animals, and would die but for that mother, who, like a guardian angel night and day keeps her eye upon the precious charge committed to her care.

But this little fellow soon comes to her feet and begins to bluster about the house, or farm as if he owned the earth and intended to take possession of it. His soothing syrup bottles, rattle boxes, rubber rings, ragged bibs and bits of cloth, in which was tied up Yum Yum, are all gathered up, with the ashes in the back-alley, by the rag man, and his long dresses packed away for the next. And now he must go to school. Somehow, somewhere, sometime, you know not when nor how, he has already acquired a vast deal of information, more or less correct, and if you catechise him you will draw from that little head things that will surprise you. His mind is like his pocket, full, heavy, bulging, overflowing with a miscellany and museum of curious things. He could get along, on a pinch, without school, but customs and the laws of society demand this peculiar kind of training.

Hitherto, for five, six, or seven years, the little fellow has got on well with the chickens, pigs, cows, dogs, cats, horses and birds; they have told him many things; he has been on intimate terms with the weather, and found its clerk a jolly, likable person, in all seasons; he can tell the time o' day by the sun and the season by the constellations; he has learned to swim, slide, skate, ride, row, fish, shoot, coast, climb, and use his fists, feet and teeth when imposed upon; he knows the value of open air, puddles, dams and snow-banks; he has entered into the treasures of the snow and hail; the rain is but a beautiful meteor; not till long afterwards does he know enough to come in when it rains; tan and freckles and spitters and stone-bruises he knows full well; he has established subtle free-masonry with a thousand things; he knows how to find bids-nests; the bees have shown him how they take, carry and hive honey; larva and pupa have opened before his eyes the mystic doctrine of the transmigration of souls, and when, years later, he lights on Hindu speculations in books, he says, "Oho! the bugs and worms told me that a long time ago. I have seen the silk-worm, beetle, moth and butterfly traverse that miracle from Hades through all the circuits of Earth and Paradise." He knows the note of every bird, as well as its form, manners and habits, and if he awakens at 3 or 4 o'clock in the morning and hears the concert, he can tie every note to the proper form, and carry the whole orchestra in his eye as well as ear, before the dawn. He has watched the flight of the July fire-flies, and examined the lamp of the glow-worm lurking in the grass, luring the winged male with her spark, and he will know what all this pretty romance means before he is 15 years old.

Happy if in coming through these years he has escaped or conquered the croup, whooping cough, measles, mumps, scarlet fever, and that other fever, whose scarlet mantles the cheek and consumes the very life, cured only by merging life, thought and soul into another life, and they twain shall be one flesh. Fortunate too if the father has not been too much absorbed in his stock to give his boys some attention, watched their growth, regulated their habits, warned against pitfalls and set up a high standard in himself; for here as

elsewhere the stream will not often be higher than its source. The father thinks more of his horses and cattle, and he does of his boys will receive comfort from them at any age.

Sam Jones was once preaching in a tucky, and he spoke of raising children. A sloughed had representative of the bible state reproved him by saying: "raise horses, sah, and bring up children." "Yes" retorted the evangelist; "you raise horses worth a thousand dollars and bring up children that are worth five cents."

Someone ought to tell these fathers that their own personal habits are likely to descend to their boys, and there is parent, however much addicted to a clean habit, who does not most heartily wish that his children may be free from them. He entertains the hope that the teacher may in some way restrain imitative boys. But it must not be gotten that example is stronger than precept.

How can we teach your children gentleness,  
And mercy for the weak, and reverence for life.

Which in its weakness or excess is a gleam of God's omnipotence averted hence,

Or death, whose seeming dumbness is less

The self same power,

When by your laws, your actions and your speech

You contradict the very things we teach

If a father uses tobacco he must expect his boys to use it; if he indulges in alcohol, even though moderately, chances are that his boys will use excess; if he permits profane language or the growth of any passion in him, his faithful little copyists will enter the same faults and nurse them, they overmaster reason, judgement and even the will.

Excellent for the girls also if the mothers have been lovingly wise in guiding them by kindly words and pure simple past the snares and pitfalls in the path of every girl whose mother is not a little closer than a friend and companion.

And in this work of bringing boys and girls to a successful manhood a womanhood the teacher has a large place. He accepts cheerfully the great responsibility, but has the right to demand that the children who are sent him shall exhibit the work of the parent upon them, restraining their tendency to evil, and engendering and encouraging the good.

The first great consideration is health. Oh! these flat chested, pale faced boys and girls, coming out of ill ventilated chambers, moping with downcast eyes in a drowsy, dreamy way and seeming to wonder when will the world come to an end, shoulders falling forward, eyes sinking, thought creeping into a silent chamber of forgetfulness! It is not a physician they want, but fresh sunlight and well directed exercise. Let the teacher aid the parent, practice and encouraging full and deep breath in pure air, with gentle movements of arms, shoulders and lungs.

The teacher may ever aid the subject in overcoming hereditary. It is a new fight, but hereditary may be largely driven out of the system.

Oh! this bug bear of consumption. No one either old or young, whether it is hereditary or otherwise should be of it if it be taken hold of in time. Consumption at nineteen? An absurdity. When closely analyzed it will be found that vile secret habits dragged the young man or woman down prematurely to the grave, but it must be called by the plain name of consumption. Neither parents nor teachers should hesitate to warn the dear young men and young women of these lurking dangers.

A second consideration is proper material for home reading. Parents should provide papers, books and games. What books and papers and games is quite a study, but well worth the time that is given to it. Here again sheep and pig show poorly in comparison. Home with in addition should be made the most attractive place in all the world, with guildings and equipments superior to the saloon. A new book added now and then is better than a large library stocked from the start. Reading aloud, in two should be encouraged, both in families and by neighbors and ought to produce equally good results with the kinistic parties, the dances, or the private "tea a tea a tea."

A third consideration is the education of the boys and girls, the elaborate and finished education, the deep penetration into truth, the enlargement of mental view, the far reaching, tenacious thought, the widening of memory boundaries, the firm and more settled convictions of character. Here there must be no blind guides. The days of imitation and implicit trust have gone by and the eye with will, independence, energy, begun to enthrone herself. The boys and girls