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The Home Economics Course.

Equipment Furnished the Girl Graduate by the School and College of Agriculture.

When the expressions "Home Economics," "Domestic Science" and similar terms, as applied to courses in our institutions of learning, are used with due explanation, an erroneous impression is often formed by those who are unfamiliar with the methods of presenting these subjects to students. The terms as generally understood are merely cooking and sewing, with a very limited amount of instruction in general housework. As a matter of fact these subjects are only a small part of the curricula, except in elementary courses which are offered in primary and secondary schools. Our Agricultural Schools, such as one at St. Anthony Park, the girl graduate Home Economics is equipped, far as is possible in the allotted time, to become an efficient farmer's wife. She is taught, not merely how to develop a series of recipes and patterns, but she is given a thorough course in the principles of housekeeping to which is added instruction in the care and management of the dairy, poultry-yard and the vegetable garden. In her work in Domestic Science or Cooking, she makes a definite study of foods from all standpoints. She considers the sources, position and uses of the various substances; the methods of preparing the foods for the table, including the arts of cooking and of various combinations of material, chemically; the varieties best suited to her needs, and a variety of menus through which her dietaries may be developed. She learns by actual practice how to obtain her friends economically, yet in a pleasing manner. She is not, also, the best methods in laundry-work, in cleaning of all kinds, in personal and household hygiene, including sanitation and water supply. She gathers from all directions many ideas which will make her easier and enable her to accomplish her more speedily. By knowing the reason for performing her various duties, she makes it possible to develop work in the future, so that it may be a pleasure as well as a duty. Domestic Art or Sewing she prepares herself for another phase of her life, which is too often neglected. To know how to make one's own and one's house pleasing as well as useful is indeed an art. Here, the girl learns the principles as well as the details, and takes away her ideas to be developed later: of color-harmony; of suitable fabrics, their sources, manufacture and proper uses; and of ways to make some attractive, even though her resources may be limited. These practical courses are added to the instruction in the use and interpretation of good literature. No extensive work is here undertaken, but each girl is away with her a little more instruction and a little more interest in our best writers. She is equipped, a girl should indeed be able to make her farm-home a delight to her husband and to her friends, and her own work more nearly a pleasure, and make impossible the life of many farm boys and girls that is nothing in their homes to either the mind or the eye. What of the girls who do not want to become farmers' wives—who do not want to be connected with the farm? By far the greater number of girls in this country will have received the ordinary public High School education, and are thus prepared to enter the higher institutions and to undertake a more intensive study of domestic problems. These institutions the object is not merely to prepare the girl for the management of the home, although this is made an important feature of her work, but to prepare her to pass on to others the ideas which she gains, as in the secondary courses, she is taught the principles of home management. She is not forced to spend time in small, unimportant details, given the foundation of sound judgment upon which she may build her individual philosophy of home economics. She is given the usual instruction in foods, in dress, and in house-decoration—carried a little farther in schools of lower grade; in addition she studies the economics of the home. She begins with milk, tracing its development from the first savage communities to the present highly-organized system. She follows a similar study of the taking into consideration future possibilities as well as past achievements. From these she passes into an investigation of the position which she has occupied, of her present position, socially, and of what the future may bring forth for her. As a woman which is fast becoming an

important one, she searches for a solution of the domestic service problem. Lastly, in her economic studies, she spends a considerable time with the rudiments of Eugenics. This subject is one of great import to the woman of the present day, and the student of Home Economics is well fitted to help to solve some of the problems which it presents.

Our higher institutions are fast learning the necessity for a thorough research into the problems of the home; but they are trying not to lose any of the advantages of a practical knowledge of the every-day home duties in a too lengthy study of the purely economic phases. The increasing numbers of those desiring courses in Domestic Economy is a most propitious sign for our home life. If there be more and more of these women, equipped with the assurance and poise of a college training, and prepared to grapple intelligently with the thousand and one little things of ordinary home life, and at the same time capable of handling the social problems which are forcing themselves upon us, we shall build for our civic and national life a foundation which cannot be shaken by the strongest political machine that can be produced. There is no nobler work, no worthier object for any woman, than the building of a good home.—Anna M. Smith, Librarian Minn. Col. of Agriculture.

Orchard, Poultry and Bees.

A Profitable Combination for a Small Acreage.

Poultry and bees are the natural allies of the orchardist in stimulating the productivity of his trees, and improving the quality of their fruit.

A flock of chickens, domiciled in one or more movable "colony houses," will feed to a large extent on the insects and larvae of insects found in the ground. Especially will they do this if the ground is cultivated—as it should be for the best results in orcharding. Many of these insects, at future stages of their existence, if not thus destroyed, may become agents of injury and destruction to trees and fruit. Chickens will also devour the wormy fruit which falls from the trees, thus again assisting in the destruction of the codling moth and some other pests. We read much of the valuable work done by insectivorous birds in general, in this direction. They certainly do enough to merit protection against the shot-gun, even though they do occasionally "take toll" of the fruit. But the faithful hen does the same work, and without taking any toll. The droppings of poultry also continually add a valuable fertilizer to the soil of the orchard, and their constant scratching helps maintain the moisture-conserving "dust blanket." Meanwhile, if the feed they gather from the soil is properly supplemented with grain rations, their production of eggs is as large as anywhere else, and they can be fattened for the market with equal facility.

The presence or absence of bees in an orchard is often of sufficient importance to determine whether the fruit-crop shall be large or small. Since practically all fruit-blossoms are fructified by the passing of pollen from one flower to another, and since the wind too frequently fails perfectly to perform the office of a pollen-bearer, great numbers of blossoms must remain unfertilized but for the friendly offices of the bees; which seldom skip a bloom as they pass from one to another in search of nectar. The pollen gathers on their wings and bodies to such an extent as often to change their color, and it is dropped on the waiting pistils of blossoms before unfertilized; thus ensuring the "setting" of the fruit. A few hives of bees in the orchard not only make the services of the little creatures in this way far more reliable than when dependence is placed upon the visits of wanderers from distant colonies; but, if clover and other blooms are near to supply them with food after the fruit-blossoms have performed their office, the hives may afford a profitable crop of honey.

The three in combination—orchard, poultry and bees—would seem to constitute, in trained hands, a very lucrative form of "intensive farming"—a form which makes the realization of a fair income from a few acres entirely possible. The "poultry," however, should not include ducks and geese. These fowls will occasionally snap up a bee; and the poison of its sting is fatal to them.—C. R. Barns, Extension Div. Minn. Col. of Agriculture.

If the lawn-grass is not doing well, scatter nitrate of soda, at the rate of about 200 pounds per acre, over it just before a rain or before watering. This may be done with good results two or three times during the summer.

"Cut down your acreage and double your culture," would often be good advice.

Keep the Chicks Growing.

Regular Feeding and Good Care Counts When Marketing Day Comes.

Most chicks are well fed and cared for while their mothers are confined in coops; but, when allowed to range, regular feeding is too often neglected, and as a result growth is retarded and they become what is termed "stunted." It appears, from statistics furnished by produce-dealers, that but 7 per cent of spring chicks marketed weigh four pounds December 1st. By this time all the spring stock of the general-purpose breeds, like the Rocks, Wyandottes, Orpingtons and Reds, should average at least six pounds live weight. Plymouth Rocks have been made to weigh seven pounds, dressed, at Thanksgiving time, by judicious feeding for growth and development while on range.

As Minnesota rears yearly 14,000,000 chickens, and as 88 per cent of all birds sold, old and young, are marketed under four pounds live weight, the above facts are worthy of consideration by every breeder of poultry in the State. Little chicks, as soon as hatched and dry, should have litter in which to scratch, so that their toes may be straightened and strengthened. Fine, sharp sand or grit should be scattered in the litter for them to pick up, and fresh water should be supplied. After forty-eight hours, their first feed should be given, consisting of a hard-boiled egg mashed up with a piece of stale bread moistened in sweet milk, but squeezed dry as possible. This should be fed five times daily, at intervals of two hours. Mixed grains of finely-cracked corn, wheat and pinhead oats may be scattered in the litter after the fourth day. The grain may also be fed in little hoppers, but scratching must be encouraged by scattering some feed in the litter.

Johnny-cake, made of two parts corn meal and one part of bran, should be baked and fed frequently after the fourth day. "Dutch" or cottage cheese is fine to produce growth in chickens, and may be fed twice daily. It should not be cooked hard, however, but the pan of clabbered milk should be heated just enough to separate the whey, and then the soft cheese should be squeezed or pressed dry in a cloth. Sweet milk or sour may also be given; but fresh, pure water should be supplied at all times. When table-scraps are fed, they may be mixed with bran or shorts and fed as a wet mash; but dry mashes will be more satisfactory.

When the chicks are weaned at six or eight weeks, and are on range, their grain ration, with grit and charcoal, may be supplied in hoppers. The hoppers should be so placed, or so constructed, that the old fowls will not rob the chicks or drive them away. A small enclosure, made of lath and covered with wire, will admit the chicks and keep others from frightening or molesting the chicks while eating. Coops of ample space should be furnished, well-ventilated, but secure from the depredation of night-prowlers. The coops, utensils, and surroundings should be kept scrupulously clean and sanitary, and the flock kept free of vermin.

Cracked corn is one of the best grain-feeds for growing poultry. When new corn begins to harden, whether sweet or field corn, it may be "whittled" or shaved from the cob for the eager chicks. On range they will secure bugs, worms and grasshoppers, and pick up grit and bone-making material.

When they have reached full height, all those intended for market should be put in fattening-crates and fed ground feed and skim-milk for three weeks. An average of two pounds per head may be added to the weight of fowls, old and young, by this method at a cost of about five cents per pound. By all means keep the chicks growing, and fatten them before putting them on the market.—N. E. Chapman, Poultryman, Extension Division Minn. Col. of Agriculture.

A Camping-Out School for Farm Boys.

Plans are being made for farm boys' encampments, to be held in connection with the University Extension Weeks, in 18 different towns in Minnesota, during the first three weeks in June. Only farm boys of good character, between the ages of 10 and 18 years, will be admitted to the camps. Each boy will bring bedding, eating utensils and athletic equipment from home. Tents and cots will be furnished. The total cost for board and other expenses of the camp will be less than \$1 per day for each boy. Camp will be made Monday morning and will break Saturday afternoon.

This will make 6 days of camp life—six days full of everything desirable for farm boys. In the forenoons they will receive instruction in practical agriculture, and in the afternoons in games and athletics. Evenings will be devoted to attending the lectures given for the University Week. The boys will acquire valuable information on crops, live stock, etc., that would take

years to learn by experience. The course comes at a time of year when things can be studied from a field standpoint, and the work may be made very practical. The boys become enthusiastic centers of interest for the Agricultural College, and may do valuable demonstration work for the College. They are made leaders in the boys' and girls' club work. Directly or indirectly they receive lessons in community life, co-operation, sanitation, right living, clean sportsmanship, and everything which makes for efficiency and better citizenship.

The camps will be under the management of young men especially fitted for leadership of boys, and will be governed by a congress made up of representatives from each tent-full of boys. The camp will be as democratic as possible, and every boy will be treated with fairness. The following places in the State are to have the University Extension Week, and have opportunity to hold a camp: St. James, Windom, Fairmont, Worthington, Luverne, Jackson, Rochester, Red Wing, Plainview, Grand Meadow, Waseca, Owatonna, Brainerd, Crookston, Bemidji, Grand Rapids, Coleraine, Cloquet.

Farmers in the vicinity of these towns should find out whether or not they are to have a camp, and if possible should allow their boys to take part. The opportunity of attending such a school seldom occurs. Boys will receive more benefit from such a school in one week than from many months of work on the farm. No father should neglect this opportunity for his boy, or minimize the effect of a camp of this kind.—J. B. Lamson, Extension Div. Col. of Agriculture.

Make the Roads Easy.

The action of the Supreme Court of Minnesota, in affirming the constitutionality of the Elwell Law, is likely to inaugurate an active era of road-building in all parts of the State. It is to be hoped that all those charged with the work of construction will bear in mind these things:

1. That the cheapest road, in the long run, is that over which the largest load can be transported with the smallest expenditure of power, whether of horse or motor.
2. That a road which is soft, whether from the nature of its top-dressing or from want of proper drainage, is always a hard, expensive road to travel.
3. That no road, so far as the size of the load to be drawn over it is concerned, is any better than its worst spot. A quarter of a mile of bog will make twenty miles of perfect road of no avail for a load which cannot be drawn across the bog. A 15-per cent grade on a quarter-mile stretch will make a long stretch of good road unavailable for a load which a team can easily haul on a level or up a 5-per cent grade.
4. A curve around the base of a hill is much easier to follow with a heavy load, and it can be negotiated in a good deal less time, than a curve over the top of a hill. Do not let a desire to follow the section-lines lead to the construction of a road with grades so heavy as to levy a big annual tax on the farmer in the way of horse-flesh, wear of vehicles and loss of time in carrying small loads to market.—C. R. Barns, Extension Div. Minn. Col. of Agriculture.

Winter Injury.

The late winter was one of the hardest on record in its effects on Minnesota orchard trees. Observations and reports from the fruit-growing districts show that a great amount of winter injury has occurred. Many of the reputed hardy varieties have suffered as severely as the so-called tender sorts. This argues that hardness is a relative term; and that, with certain reservations, it is not a matter of variety, but is dependent upon the condition in which the tree goes into the winter. I have found little or no injury on trees that went into the winter in a well-ripened, fully dormant state. Cover-crops should be used in connection with cultivation, and even a tough blue-grass sod may be advisable on heavy, rich land.

The manifestations of injury are weakened foliage, hardy growth in the new shoots, many buds dead on the new growth and on the fruit spurs in the tree; and, in many cases, discolored wood in the branches and twigs. While the wood will never resume its clear color, and the weakening of the tree will prove to some extent lasting, the trouble will be corrected naturally by a good growing season this summer. But should this summer be very hot and dry, and should no earnest attempt be made by the grower to encourage his trees to outgrow their injury by cultivating and fertilizing, another winter, of even considerably less severity, would probably mean the death of much of his orchard. Moderately heavy pruning, taking out as much of the injured wood of the tree as may be conveniently and safely done, is to be recommended.—K. A. Kirkpatrick, Extension Div. Minn. Col. of Agriculture.

Kill the Roosters.

Minnesota has a surplus from her farms, annually, of over a million and a half cases of eggs. Three-fifths of these are produced before September 1st of each year. The Government experts consider that there is a loss of 5 per cent in value because of "chick development," or because roosters run with the laying flock. This common practice causes a loss of above \$1,000,000, annually, to the farmers of Minnesota. What should be done?

A few breeding cocks, the best produced, should be kept for exchange with other farmers, or for sale. These should be confined by themselves, like all the other breeding stock of the farm; and all the rest should be killed or sold at once. They should never be allowed to run with the flock. You will get just as many eggs; they will cost you less; they are more easily preserved; will withstand heat longer; are better for shipping; are better for storage; will save the hens from injury during the molt; and they will go to laying sooner. Mate up your breeding pens; keep two or three extra birds for emergencies; then sell or kill all the rest of the roosters on the farm. Help save that million dollars; and perchance save yourself from paying a fine of \$50 for marketing eggs unfit for human food. Let there be a mighty slaughter of these non-productive, greedy, useless roosters on the farm.—N. E. Chapman, Poultryman Extension Div. Minn. Col. of Agriculture.

Feeding Horses.

We feed cattle to produce milk or beef; sheep, to produce wool and mutton; hogs, to produce pork. The horse we feed to produce energy alone; and the amount and quality of the feed should be graduated according to the expenditure of energy to be demanded from the animal. If the horse is highly fed, and no sufficient outlet provided for the energy developed by the food, the result is disease and injury—sometimes fatal. If a great expenditure of energy is demanded of him, while he is fed insufficiently for its production, the demand is met by the consumption of the animal's own tissues, and by such a drain upon his vital powers as, again, may seriously impair his value. It is seen, then, that from the standpoint of the horse's physical well-being alone, the proper adjustment of rations to the amount of work performed is something well deserving of serious study. But on it, too, depends the question of the cost of horse labor and of the comparative value of the horse and the machine in the operation of the farm. Wasteful or inconsiderate feeding may often cause the question to be determined to the disadvantage of the horse; whereas, with a ration adjusted each day to the amount of work required, he might bravely hold his own, for a long time yet, against his puffing rival.—C. R. Barns, Extension Div. Minn. Col. of Agriculture.

Whitewashing Trees.

Just now is the time for whitewashing the trunks of the orchard trees, to ward off borers and to keep the bark smooth and healthy. A good wash is made from three pounds of the best stone lime, one bar of shaved laundry soap dissolved in a quart of boiling water, and one-half pint of crude carbolic acid.

Place the lime and acid in a pail, and pour over them the dissolved soap. This will start the lime to slaking. Then add small quantities of cold water—not enough to flood the lime, but just to keep it boiling violently until slaking is completed. When slaked, add sufficient water to make about two and one-half gallons of the mixture. The wash should be about the consistency of thick paint. Make up a fresh lot as needed. Apply with a cheap paint or whitewash brush. The soil should be removed to a depth of three or four inches at the base of the tree, and an examination made for borers. If the dust-like borings betray them, dig them out with a pocket-knife, or thrust a piece of small wire into the burrows and kill them. If the trees are young, the bark of the trunk and larger branches should receive a good rubbing with an old leather mitten, worn on the left hand. On old trees, the scaly bark should be removed with a tree-scraper. The wash should then be applied to the trunk and larger branches, and the soil replaced about the base.—K. A. Kirkpatrick, Horticulturist, Extension Div. Minn. Col. of Agriculture.

Run a lawn-mower over the lawn frequently. It pays to have a neat, well-kept lawn; and a place that does not have at least a small clipped lawn is behind the times. If a lawn-mower cannot be had, at least run the field-mower or a scythe over the lawn occasionally.