

OF INTEREST TO FARMERS

TYPES AND PRINCIPLES OF PIGGERY CONSTRUCTION

(Experimental Farms Note)

A consideration of types and the principles of piggy construction brings up a classification of swine growers, roughly as follows.—

1.—The farmer who keeps two or three hogs and from which class comes the great part of Canada's hogs.

2.—The farmer who specializes a little more in swine growing, keeping five or six brood sows and a boar.

3.—The out and out hog man who goes in for hogs exclusively, keeping thirty, forty, fifty or perhaps more brood sows and working as closely as possible on the two litter a year plan. There are few in this class.

Considering briefly the types of buildings required for the above classification, the following basic principles must apply to all:

1.—ECONOMY. No business can operate efficiently with too much overhead expense. Pork production operates on a close margin of profit. In the main, comparatively cheap buildings are advisable, not only on account of low cost, but because they are best otherwise.

2.—DRYNESS AND GOOD VENTILATION. These must be obtained in some way. Possibly no farm building is more difficult to ventilate than a pigery and no animal requires fresh air and quarters more than a hog.

The man who keeps two or three brood sows, if any special buildings, his sows are wintered in low straw covered sheds or shelters adjacent to the barn yard. Two main requisites are automatically acquired—fresh air and dry quarters and exercise. At farrowing time a box stall is usually available. If the litter comes early, such quarters usually prove sufficiently warm for the little pigs. These after weaning may be fattened on pasture or in a paddock or dry lot with a cheap shelter or if indoor feeding is preferred, in a shed or empty building improvised for the purpose.

This may sound like make-shift practice. The fact remains that no one can afford to spend more than is absolutely necessary on such quarters. The essential building is for farrowing his sows. If his sows farrow all about the same time and if he plans for the winter feeding, he must have heated quarters; in other words a building all or part of which is warmly built and therefore comparatively expensive structure.

Generally speaking the best arrangement makes possible the closing off of two or three pens next to the feed room where a heater may be installed. This portion of the building must be doubled boarded and tightly ceiled and with a ventilation system. Cement is excellent in the main, but the farrowing pen floor must be of wood or plank covered with wooden cements. A drainage system must be provided to ensure dryness. For the balance of the building excellent results have been obtained by making use of single board walls, a slatted ceiling covered with straw, earth floors and a floor ed section over which is built a low straw covered sleeping berth. Such quarters are excellent for weaned pigs or for fattening hogs if any time of the year. Ventilation is automatic. The expensive construction is limited to where it is really essential. The balance is of cheap construction. Plans of piggeries of this style may be obtained from the Husbandry Division, Central Experimental Farm Ottawa.

The extensive hog man needs special buildings. Nevertheless he must strictly follow economy in construction. Expensive or comparatively expensive construction is required ONLY FOR FARROWING QUARTERS. Open sheds with straw covered sleeping quarters have proven excellent for winter fattening of hogs. The straw left on the floor, enclosed berths, type of building makes an excellent and comparatively cheap structure which embodies all of the essentials and which is useful for all classes of hog with the possible exception of the early farrowing sow and the sow during the gestation period. The cheap portable cabin is a building much in demand on the big hog farms both in winter and summer. Plans of the larger types of piggeries may be secured from the source already mentioned.

G. D. ROTHWELL, Dom. Am. Husbandman.

Summer Heat Hard On Baby

No season of the year is so dangerous to the life of little ones as the summer. The excessive heat throws the little stomach out of order so quickly unless promptly aid is at hand the baby may be beyond all human help before the mother realizes he is ill. Summer is the season when diarrhoea, cholera infantum, dysentery and colic are most prevalent. Any one of these troubles may prove deadly if not properly treated. During the summer the mother's best friend is Baby's Own Tablets. They regulate the bowels, sweeten the stomach and keep baby healthy. The Tablets are sold by medicine dealers or by mail at 25 cents a box from The Dr. Williams' Medicine Co., Brockville, Ont.

FEEDING THE WORK TEAMS

By W. H. UNDERWOOD

The horse that exhibits the greatest endurance and hardihood in the collar is the one that is healthy and well fed. An animal worked steadily and kept petite and strong usually has a good appetite and strong digestive powers. He needs a liberal feed, but never should be given more than he will eat up clean belly for that most than are fed too much rather than too little. About two pounds of hay and grain per day for each 100 pounds of live weight is usually enough to keep a horse in good working condition. As to the grain portion of the ration, I believe oats have no equal, especially during warm weather. Oats contain a larger proportion of muscle-making food than any other and produce more nerve and spirit while being cooler to the system. In the best mean to feed oats exclusively. A variety of feed is not only much relished by the animals, but is absolutely essential to their best condition. They will do better on a varied ration even though it contains no more actual nourishment because the variety appeals to their taste and that aids the process of digestion. Like oats to form the basis of their ration and be varied by the addition of other suitable feeds. I always feed my teams some corn, but in warm weather do not feed much of it, as it produces fat and heat and work teams need feed that makes muscle and gives strength and endurance, which feed usually has a cooling influence over the system, a feature to be sought in summer. As to the best kind of hay to feed, I prefer timothy cured clover or alfalfa and timothy mixed, about two thirds of the clover or alfalfa to one-third timothy. Meal is not a natural food for work teams. It is too concentrated. If used, it should be mixed with chopped hay or other roughage dampened.

The importance of regularity in everything that pertains to the management of the work teams cannot be over-estimated. This applies particularly to the feeding. Whatever feeding materials are employed in the ration, the animals should be fed regularly and uniformly at all times. The digestive system and vital activities of a horse become accustomed to a certain order which we must follow if we are to get his best services. The horse's digestive system is not so large as that of a cow or sheep. He has no rumen, no place to store his food to be masticated at will, hence when at work we should feed him regularly and uniformly. Investigators have shown that the stomach of the horse must fill and empty itself two or three times for each meal given. It appears that during the forepart of the meal the material is pushed into the intestines by the food which follows almost as soon as it enters the stomach, while toward the end of the meal the passage is slow and the digestion in the stomach is more perfect. This being true, it would seem that the more nutritious foods should be fed toward the end of the meal, especially since some of the very important nutrients are largely digested in the stomach.

The order of giving the feed cannot be discussed intelligently without considering the time of watering. Some believe that watering should be done before feeding, while others are equally certain that watering should precede water. Each of these methods is probably equally good for the animal and the one employed will be determined by circumstances. For example, after severe loss of water, such as occurs as a consequence of long-continued exertion, the animal may perhaps be allowed to drink before he is fed, otherwise he will not feed well. On the other hand, the method of watering may affect the appetite in some animals and as a result they will not eat as much as they should. Again it has been clearly demonstrated that if the feeding is done before the watering, much of the food is carried into the intestines by the water. Since the grain of the ration is rich in digestible nutrients, it should stay in the stomach as long as possible for the digestion of protein one of the most important of the nutrients, is more complete there.

In feeding and watering our teams we usually follow this plan. When the animals are hot and tired the harness is removed after they are brought to the barn and the animals allowed to rest. Then a small quantity of water and eat their feed. When ready to go to work after dinner they are given all the water they want. At night they receive a small quantity of water before feeding and do not get any more until about an hour after eating.

We always do our feeding before we eat breakfast, and it is an hour or so after the animals have been fed before we take them out to work. They are allowed to drink all the water they want at this time. We never do any watering before the morning feed. Our teams always present a good appearance so far as looks are concerned, and it is very seldom that one of the animals shows the slightest symptom of any disorder of the system.

FEEDING OIL MEALS TO DAIRY CATTLE

(A special Article from Successful Farming, an American Publication.)

Few dairy farmers appreciate the value of oilmeal for feeding dairy cows, and young stock, so far as chemical analysis can be made. It may be stated that prime cottonseed meal and oilmeal have about the same feeding value, there is a big difference, however, in the properties of these feeds, and upon their value when fed along with other feeds, which the prudent feeder cannot afford to overlook when making up cheap and efficient rations for his animals.

One of the most interesting things brought out in the feeding experiments recently conducted by Hart and Steenbock, at the Wisconsin experiment station, is the remarkable supplementing quality of the proteins of oilmeal for those of other grain feeds. In feeding with cornmeal, for example, if twenty-five per cent. of the proteins of oil meal are supplemented with 75 per cent of the proteins from cornmeal the mixture is utilized for the formation of body proteins to the extent of about forty per cent.; whereas corn proteins alone tend to the extent of only twenty-four per cent., and those of oilmeal to rather less than twenty per cent. Feeders of dairy cows have noticed equally as satisfactory results from feeding oilmeal along with cornmeal to cows producing maximum yields of milk, but have been unable to explain the results, other than that the oilmeal had a beneficial effect upon the bowels and digestive system of the cows. Experiments and experience indicate that when twenty-five per cent. of the proteins come from oilmeal the results are better than when proportions are used, especially when cornmeal makes up an important part of the grain ration.

Such results indicate the great possibilities of mixing various grain feeds so as to overcome the weaknesses of certain feeds and make a more valuable mixture than is possible when proper attention is not given factors other than chemical analysis. It should be clearly understood, however, that much of the research work in mixing grain feeds is not perfected sufficiently from the standpoint of chemical analysis to help us in predicting the value of a single protein or a combination of proteins for milk and growth. The only way to work out the feeding problems is to give the feeds to animals and observe what they do with them. The way of growth and milk production. To secure the most reliable results in determining the value of feeding materials it is important that we conduct experiments with cows giving a maximum flow of milk, or with young animals which make a rapid gain as the chemical nature of their feed will allow.

Aside from the value of oilmeal as a supplement to other grain feeds I believe that a feeder can afford to pay more for oilmeal than for cottonseed meal when there are no succulents, such as roots or silage, to form a portion of the cow's ration. When there is such silage, it does not make so much difference whether the feeder uses cottonseed meal or oilmeal, but I would prefer to feed at least one-half oilmeal to counteract the constipating tendencies of cottonseed meal. Where there are no silage, dry feeds one can well afford to pay several dollars more per ton for oilmeal than for cottonseed meal because oilmeal has a laxative effect upon the animal's digestion.

Many feeders are convinced that these recent experiments have not fully determined all the qualities of oil meal, but I do know from many years' experience that it is a most valuable feed for dairy cows and growing calves. If an animal is run down, out of condition, so to speak, and is fed a little oilmeal in a short time, his good effect in a short time. Butter crumbs and place a piece of bread on each; bake in a quick oven fifteen minutes.

DESTROYING WEEDS BY MEANS OF CHEMICALS.

While the hoe and the cultivator are likely to remain as the two most efficient weapons to use in the combat with weeds, there are certain cases where the use of chemical means is extremely desirable. A good example of the latter is the case of a grain crop infected with an annual such as Wild Mustard, where it is possible by spraying with Iron Sulphate or Copper Sulphate to injure the weed to such an extent that it is unable to ripen its seeds.

There are also numerous plots of waste ground in towns, miles of roadsides all over the country, railroad tracks, and large areas of stony or rocky ground that cannot be cultivated, where the employment of chemical means for keeping down weeds might be profitably considered.

The spray should be applied in fine calm weather when there is a probability that no rain will fall during the next 24 hours. The amount of spraying mixture will vary somewhat with the kind of spraying machine but as a general rule at least 60 gallons are necessary to cover an acre. The spray should be applied while the weeds are young.

The chemical substances that are most employed for killing weeds are sulphuric acid, iron sulphate, copper sulphate, common salt caustic soda, sodium arsenite carbolic acid, orchard heating oil and fuel oil. After the use of some of these the soil remains sterile until the chemical has been washed out by rain. In calculating the amount of material it has to be remembered that a gallon of water weighs 10 pounds.

Sulphuric acid or oil of vitriol has a corrosive effect on the spraying apparatus and can be used only in a weak solution varying from 3 to 10 per cent. It has no injurious effect on wheat, oats, or barley crops and has a fertilizing effect on the soil.

Copper sulphate or bluestone can be used instead of iron sulphate but only in a solution of 1-12 to 2-12 per cent.

Common salt or sodium chloride is used in a strength of 20 to 25 per cent. It checks the growth of other plants besides weeds until it has been washed out by rain. Sodium arsenite is used at the rate of 2 pounds to 60 gallons of water. It is very poisonous and the powder is dangerous to health if inhaled. It kills all vegetation.

Carbolic acid is used in a solution of 12-1/2 per cent or stronger. Orchard heating oil is applied at full strength in a fine mist. It destroys all vegetation but is not poisonous and does not injure the soil.

Fuel oil can be used on waste grounds and garden paths. After its use the soil remains sterile for a considerable period.

Of the various patent weed killers "Atlas" was tested during the summer of 1920 on various weeds and gave good results.

J. ADAMS, Division of Botany, Ottawa, Ont.

Old Seeds Cannot Bloom.

A nice little story came through the news the other day about morning-glory seeds 5,000 years old, found in the hands of an Egyptian mummy girl "older than the pyramids," and which, on being planted recently, sprouted and brought forth blue flowers.

"Evidently," said the despatch, "the favorite flowers of a little Egyptian maiden, in whose hands the seeds were placed in order that she might plant them in another world."

One would like to shed a sympathetic tear, but trouble is that the year is pure fake. Every now and then one reads how seeds resurrected with mummies, usually wheat or barley, which sprout when planted. The thing is impossible.

In France there is a noble family called Vilmorin, whose present chief is the head of the greatest seed-growing concern in the world. He has a vast staff of botanists, and has made a special study of the vitality of seeds of cultivated plants with a view to determining their length of life. The results of his work in this line are printed in authoritative text books.

Summed up, they inform us that the seeds of about half a dozen species will sprout after being kept under the most favorable possible conditions for ten years. This is the maximum. The seeds of most cultivated plants retain vitality for much less than half that length of time. Those of wheat, barley and other cereals are dead after two or three years.

MAINTAINING THE MILK FLOW.

The high cost of milk production that has prevailed during the past few years has necessitated a close and more intimate knowledge of the feeds and feeding care of the dairy cow.

In other words the dairyman is more anxious than ever to understand and practically fulfill what the man of more scientific knowledge terms the "Balanced Ration." This in other words means the proper relationship that should exist between the various digestible nutrients present and between the digestible and indigestible portions of the ration.

There are many cows that are fed rations that are deficient in one or more of the necessary nutrients and these animals have to draw on their own bodies for the supply necessary for milk production, when this supply is exhausted there is a decrease in production. Cows that are fed in this manner produce milk in fair quantities for a few months after calving in spite of the poor feeding they get. However, after they have drawn upon their bodies as long as they can for the nutrients necessary for milk production they rapidly decline in their milk yield. When they are dry, many of them store up in their bodies nutrients to be used for milk production during the next short lactation period.

A hard and fast rule giving a proper balance of the nutrients—proteins, carbohydrates, and fat—is difficult to determine, for the balance of nutrients required by a cow depends on a considerable number of factors. Among these are the age and the size of the cow are important.

Young cows are still growing while they are producing milk and their ration should provide the nutrients required for this growth and thus a ration for milking heifers will require more protein and ash, in proportion to the other constituents, than will a ration for older cows, as protein and ash are the constituents especially demanded for the purpose of growth.

Authoritative opinion states that "the influence of the size of the cow on the nutritive ratio required in her ration is rather a complicated one. Large cows consume less feed and produce less milk and butter per 100 pounds live weight than do small cows of the same breed, though the large cows produce more milk and butter per 100 pounds of milk consumed. As the small cow produces more milk per 100 pounds live weight her maintenance requirements constitute a relatively smaller portion of her total feed requirements than is the case with the large cow. Consequently, the small cow, other things being equal, will require a narrower nutritive ratio than will the larger cow, as relatively less protein is needed in the maintenance part of the ration than is required in that part of the ration used for productive purposes."

Yield and Quality of Milk.

A cow in high condition should be fed a narrower ration than one in a thin or subnormal condition. The cow in low condition should be fed on an abundance of fat and carbohydrates to bring her into good condition. After a certain point is reached the greater the milk pro-

duction the greater will be the amount of nutrients required for the production of each pound of milk. A cow giving 40 pounds of milk per day may require more than twice as much nutrient material above the amount required for maintenance for its production as will a cow giving 20 pounds of milk per day. She will probably require an increase in amount of protein, the activity of the secretory cells of the udder may need material for the replacement of worn out tissue. And the richer the milk the nutrients will be the amount of nutrients required for the production of each pound.

More feed is required to produce 100 pounds of milk when the lactation period is beyond the first flush of the milk flow. As the amount of milk produced per 100 pounds live weight decreases with the advance in lactation the total amount of feed eaten per 100 pounds of milk produced must increase. It must be remembered that the later stages of the lactation period the cow is usually pregnant, and, therefore, for the growth of the fetus it is necessary to provide for the cow at this stage a ration with a good supply of protein and ash. The body reserves of the cow and an increase of her weight must be kept up, and this can only be obtained by the liberal use of carbohydrates and fats, consequently, the ration at this stage will require to have a wider nutritive ratio than that used earlier in the period.

The body reserves of this fact many dairymen do not realize it or act accordingly in their feeding operations. It is a period in the lactation when the average dairy farmer neglects his cow.

Individual cows vary not only in the total amounts of nutrients, but also in the relative proportions of the various nutrients which they require for the purposes of maintenance and production. Cows of the same weight and producing equal quantities of milk of the same quality will vary in their requirements and such variations are due to the "individuality" of the animals.

TREAT SEED GRAIN FOR SMUT.

Any crop that is worth growing at all on the farm is worth growing well, and the farmer should best his efforts with that end in view. Take for instance the case of smut, which disease costs the country millions of dollars annually. There is no good reason why smut should be a very large extent at least should not be eliminated from our farm crops.

The most effective method of treating grain on the farm is the formaldehyde treatment. This will not only control the loose smuts of wheat and barley, it is very effective in controlling the smuts of oats, the covered smut of barley, the bunt or stinking smut of wheat, and the stalk smut of rye. The cost of treatment varies with the labor available at the market price for formaldehyde, but at most it amounts to only a few cents a bushel.

The solution used is made up as follows: 1 pint 40 per cent formaldehyde in 20 to 35 gallons of water. The process may be more or less varied, but those given have been found by experiments to be best for the control of smut. But, himself up to be man of limited experience, to feel that he is an expert in the art of telling a horse's age. Men who have spent years in handling horses, and who have handled many thousands each year, know that they have often times been mistaken in their judgment in telling a horse's age. Any one who thinks he can tell the age of any horse or of all horses up to a certain age, is devoid of common sense. There is only one way to definitely tell the age of a horse, and that is to learn the date when the horse was born. There are several things that indicate a horse's age with a fair degree of accuracy. In fact, they are constant enough that the average man can rely on them for all practical purposes.

DETERMINING AGE OF HORSES.

One frequently comes across an individual who claims that he can tell the age of a horse at sight or after the animal has been subjected to general surgery. Any one who persists in his assertion to be able to tell the exact age of a horse, without a knowledge of the date of the animal's birth is not a man of limited experience, to feel that he is an expert in the art of telling a horse's age. Men who have spent years in handling horses, and who have handled many thousands each year, know that they have often times been mistaken in their judgment in telling a horse's age. Any one who thinks he can tell the age of any horse or of all horses up to a certain age, is devoid of common sense. There is only one way to definitely tell the age of a horse, and that is to learn the date when the horse was born. There are several things that indicate a horse's age with a fair degree of accuracy. In fact, they are constant enough that the average man can rely on them for all practical purposes.

Treatment Best for Barley

One pint 40 per cent formaldehyde to 20 gallons of water. Temperature 60 degrees. F. Soak the seed in loosely filled burlap or gunny sacks for two hours. Drain on slats over the barrels or tanks to avoid wasting the solution. Dry by spreading on a clean floor or canvas and stirring occasionally with rake or shovel. Examine the seed by inserting the thumb in the wet grain. So soon as the seed will run freely, or dry thoroughly and store in clean bags or quires a two hour treatment to kill the leaf strips and loose smut diseases.

Treatment Best for Oats, Wheat, Rye

One pint 40 per cent formaldehyde to 25 gallons of water. Dip the seed in loosely filled burlap or gunny sacks into the solution and soak for five minutes. Drain and place the grain on a clean floor or canvas and cover with sacks of canvas for two hours. This covering is important as it prevents the rapid evaporation of the formaldehyde.

Dry Method Recently Introduced for Oats

One pint of 40 per cent formaldehyde to one pint of water. Put this solution in a quart atomizer or hand sprayer, and spray onto the grain which it is being showered over a clean floor or canvas, holding the atomizer close to the grain. One quart is enough for 40 to 50 bushels of oats. Then pile and cover for five hours. There is no danger from freezing or heating, and because the grain is not swollen there is no need to increase the amount to be seeded.

EXPERIMENTAL AND RESEARCH WORK IN GRAIN AND FIELD CROPS

Experimental and research work, promoted by, and under the guidance of, the Dominion Department of Agriculture, has made great strides in Canada during recent years. It is to be noted, for instance, that the discovery of a hard wheat by the Cereal Division of the Experimental Farms branch has enriched the wheat growers of the three Prairie Provinces by \$20,000,000 annually, and that the introduction of Preston, Stanley and Huron wheats into the other provinces has brought about a gain of at least half a million dollars yearly. But wheat is not the only grain that has profited immensely through the work carried on at the Experimental Farms. By the introduction of Daubeneay, Victory, and in particular Banner oats, a gain has been made of over \$9,000,000 annually, while other new grains, such as barley, flax and peas, have proven responsible for an increase in value of \$3,000,000 annually. All of these must and will develop in still greater profit to the country.

Experiments in plant breeding work with garden and field crops have led to the discovery of many new varieties, such as the Modesto apple, Early Malcolm corn, Albany tomato, etc. Hardy varieties of tree fruits have been proved of good growth in the Prairie Provinces, while some valuable discoveries have been made in foreign crops, notably a perennial red clover, a remarkably valuable research work has been done by the Division of Chemistry, and by the Division of Botany, and by the Health of Animals, Entomological and Seed Branches. Canada has been shown to be the healthiest of all countries in live stock, a system of supervision and control adopted by the Dominion Department of Health of Animals Branch. By its precautionary measures and other activities it is conservatively calculated the Division of Botany has saved the country \$32,000,000 annually, largely by its crusade against smut and its control of late blight and rot of potatoes and other diseases to which plants are subject.

The work in the plant breeding branch when it is stated that to field crops alone a justifiable estimate is that the depredations of insects cause a loss each year of \$125,000,000 some idea of the colossal work involved can be formed. In field husbandry, by the greater use of crop rotations and the application of the most profitable rotations for each district, it is estimated that Ontario is benefited annually to the extent of \$32,000,000, while by summer fallow, a system urgently encouraged by the Experimental Farms branch, the Prairie Provinces are thought to gain \$90,000,000 annually. These few facts will illustrate the importance of the work being done in the development of Canadian agriculture.

Judging Age After Eight Years.

The evidence by which the age of a horse may be judged after passing eight years is not as positive or definite as are the changes before noted. The supps in the upper teeth leave at a later date than those of the lower. They are not as regular, however, in regard to time, but average about as follows:

Disappearing from middle incisors about 9-12 years.

Disappearing from intermediate incisors about 12 years.

Disappearing from corner incisors about 11-12 years.

The form, length and position of the teeth change as the horse advances in age. In the young horse the teeth are short, wide and meet the opposing teeth so as to form nearly a straight line. In the old horse the teeth are longer, narrower, and meet so as to form an angle. Knowledge as to the amount of change in form, length and position occurring from year to year must be gained by close study of the teeth of horses of known age.

The wearing surface of the incisors in young horses is oval in outline and much wider from side to side than from front to back. As the teeth wear, the width from side to side decreases and the front to back measurement increases until at approximately 16 years of age, these two measurements are equal. The wearing surface also assumes a triangular rather than an oval outline as age advances.

At about seven years of age, the rear corner of the upper incisor teeth shows a small projection as the rear of the tooth does not meet the lower teeth squarely. This is due to the wear on the tooth. It is a fairly accurate guide mark, when it has not been removed.

Another mark on the outer surface of the corner teeth on the upper jaw, indication is the "Galvayne" mark, gives indication of the age of a horse at 10 years and over. It is a depression in the outer surface of the upper corner incisor appears at the junction of the gum and the tooth. This is about half way down the tooth at 15 years of age, reaches the bottom at about 20 years, is about half gone at 25 and has completely disappeared at 30 years.

The indications of age are not given as positive proof, conditions after cases. Horses pasturing on sandy soil or on rough grasses will have their cups worn off at an early age. The crib-biter also has his teeth smoothed through the action of his vicious habit, and not according to his age. The teeth of the horse faker, who practices the art of "bitching" or making artificial cups in the old worn teeth, but this will never deceive the experienced horseman. If the composition of the teeth were always the same, the feeding of any food, and the teeth are not interfered with in any manner, the age of horses could be determined with a certain degree of accuracy. But it is absurd for any individual to make pretense of being able to determine an animal's age with any degree of certainty. It is possible, in some cases, from the indications given in this article to arrive at a decent estimate of the age of a horse. If one is able to determine the difference at all times between an old horse and a young one, they have accomplished something that is more than passing interest.

A Woman's Right To Good Health

MOST TROUBLES AFFLICTING WOMEN ARE DUE TO POOR BLOOD

FEED CHICKS SOUR MILK

The feeding of sour milk is almost a specific remedy for white diarrhoea, leg weakness, cantharidin, and apes, which are the causes of heavy losses in young chickens. The feeding of sour milk stimulates rapid early growth. These chicks are not susceptible to early chick diseases and have enough vitality to resist them. It is impossible to overfeed chicks on sour milk.

Sour milk is preferred to sweet, since it is apparently more palatable and because it is practical to keep milk sweet for chicks under average farm conditions. Changing from sweet to sour is not a good practice.

Hatching Guinea Eggs

Guinea eggs may well be incubated under ordinary hens because guinea hens are likely to become broody late in the season, and, moreover, they are hard to control after the young guinea are hatched. An average-sized hen can cover about eighteen eggs, and they require about twenty-eight or thirty days of incubation.—M. A. J.

Eliminate unprofitable egg layers and reduce the feed bill.

It is easier to raise lice than chickens, so that if you want the latter you must keep down the former.

Infertile eggs will withstand marketing conditions much better than fertile eggs. Remove the males from the flocks as soon as the breeding season is over.

Most Amazed Man In World

THIS IS WHAT SIMON PIKE OF TRINITY BAY SAID WHEN HE RECOVERED HEALTH

"I wish I could see every man that suffers as I did so I could tell my experience with Tanlac," said Simon Pike, of Old Perlican, Trinity Bay, N. F., at present in the oil refining business in St. John's.

"Since I have gotten my health back I feel I would be selfish in not to tell other people where they can get relief, (Tanlac). My stomach was in very bad shape and everything I ate disagreed with me. I had awful dizzy spells, too, and frequent attacks of biliousness. I did not sleep to do any good and got up in the morning feeling tired and worn out. I kept getting weaker all the time and finally got to the point where I was not able to do half my usual amount of work. I believe first and last I took a barrel of medicines of different kinds without getting any results, so I was the most amazed man in the world when I found that Tanlac was doing exactly what I had been looking for so long.

Within a week it entirely relieved me of indigestion and I had such an appetite that I could eat three big meals a day. The good effects have continued and I am as well as I ever was in my life. I sleep like a top and get up in the morning feeling fine and am able to do twice as much work as I did before I took Tanlac."

Tanlac is sold in Charlottetown by Reddin Bros. and by leading druggists.

WHEN WATCHING THE HATCHING MOISTURE AND VENTILATION IN THE INCUBATOR.

In my experience with an incubator the most important factors are that influence the hatching moisture and ventilation. If the ventilation is increased, the moisture content is reduced and the evaporation is increased. Just what the proper amount of moisture or evaporation should be is a much debated question. One can be safe in saying that too much moisture is just as serious as too little moisture. One of the best methods for determining the correct amount of moisture is that of weighing the eggs. Just what method can be followed in weighing the eggs will depend upon the facilities at hand. If scales can be provided that will permit the weighing of the entire tray it is an easy matter particularly if the scales are provided with a tare beam. The tare weight of the tray can be marked on the tray and the tare weight set and the reading made direct. If a tare beam is not on the scales the tare weight can be recorded and subtraction made for the net weight.

Generally speaking, experiment results show that it is desirable to weigh the eggs three times during the hatching period, on the 6th, 12th and 18th days. For the 6th day period the loss of weight for each hundred average eggs should be approximately 10 ounces. If the weight is taken on a different number of eggs it is easy with this basis to figure the correct amount of loss. In no case is it advisable for the moisture loss to run higher than 10 ounces per 100 eggs for the first six days. In fact, it will not injure the hatch if the loss is a little less. If the moisture loss is excessive, decrease the amount of ventilation, the use of sand trays or by sprinkling the eggs. It should be kept in mind that the loss of moisture from the eggs should be prevented rather than to attempt to replace the moisture by the use of sand trays, sprinkling or wet cloths.

The eggs can be dried down very rapidly the last few days. If at the 18th day, weighing is found that the moisture loss is not sufficient, by opening all of the ventilators it may be possible to reduce the moisture content so that a good hatch will be obtained. However, if at the 18th day weighing it is found that too much moisture has been lost, it is practically impossible to supply it.

Judging Age by Teeth.

Familiarity with the changes that occur in the teeth makes it possible to determine quite accurately the age of horses about middle life, and to estimate the age beyond that period. The incisors or front teeth are examined for determining age. The best method of making the examination is to insert the thumb in the horse's mouth behind the incisor teeth, the thumb of the left and pressed on to the upper jaw and the fingers of the left hand on the animal's nose, while those of the right hand are closed about the horse's jaw. By pressing down on the lower thumb the mouth can be opened very easily if not to roughly handled, and a very good view can be had.

There are three indicators of age: first, the eruption of the teeth, second, the "cups" or "tablets" on the wearing surfaces, and third, the form and relative position of the teeth in a mouth under four years there will be some coat teeth. These coat teeth are somewhat smaller and whiter than the mature horse teeth. They also have smaller necks and less groove. The form and position of the teeth shows in the enamel or outside covering. With a little practice they can be told from the teeth of mature horses. The canine or "tush" teeth of the male horse usually one at four or five years of age. When all the permanent incisors are in and up in full wear at five years of age, the animal is said to have a "ful mouth" and is looked upon by the market as a mature horse.

"Cups" or depressions in the incisor teeth are peculiar to horses, mules, asses and all animals of the horse species and are not present in the teeth of ruminants such as cattle and sheep. The caps

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