quires different characteristics in the two types.

supply of food is not uniform, and during the

winter months there is cessation of growth.

Shelter on the range is often absent or very

poor and the animals must be protected by a

thicker hide, longer, finer, and denser hair or

wool and their scant supply of food is demand-

ed for the purpose. Activity is required be-

cause the animals must cover a great amount

of land in order to secure their food, and a dis-

and son, carried on for Of the letters in this interesting than those broke. He speaks freely as to which, in his reticent, reserved, or upon such sentences as g of terror." "The more is thought about the comes." There was a he popular imagination. erything than Macauus Herbert Spencer, as th as the legend that as the habit of eating talgive special nourish-

ot examine closely the system reared in a long tion to its construction. aise, a little vague, but, ell deserved. Even the sciples will own that of the "First Principles" realed. Wide yawning at once seemed smooth ere are serious settleouildings, and some pilbe made of all-endurbe only stucco. There er by Mr. Francis Galon the failings of his is strong leaning to a than experiment. Galexity as to the peculiar-

Spencer replied that best way to find out t study their uses; and evolve a wonderful and and plausible theory, rawback—the facts as to question were exactly is theory assumed. One ere is often in the best on between abstraction t his synthetic generalis little more than distions; and that his law eks to give the history ich sums up all that is, loss of internal motion ration, eventually folrnal motion and consetells little to the physiscientific inquirer in any. is abstract reasoning is from realities af a gen-Aquinas That does not sition as a thinker, a rking for order, a masage of accumulation of bold innovator in many and for all time an exi service in the cause of

bition

it will be possible to tisfaction the different h and French. Canada advanced; the builddy, and in about a week and open. Each is ad-Canadian palace, very d, and simply designed while the Indian of the proper Oriental little more to see than it in the centre is the hy which was shown which attracted much borate beauty of its as all the art of Chinese influence. The ultimately rival the quite so far advanced; ous buildings representench Colonies and the lages, one must wait y idea of what they will e Irish village, which s of the exhibition, has ind some of the houses d assemblage of all architecture are not

outline is the exhibien paid a private visit hich in the depressing vas formally opened by of Wales. It was too but in these cases one good-natured, to forthey have been a little to admire what is rd to what is promised. chibition of great size y, made simple by a nt that a child could tit; and an assemblage and sizes, some simple ing in their ornate gardens and walks that ipation. There is also its kind in the world, nonstration of athletes for its purpose. What ordinary display of the ooth nations, aided by endencies, and ample ng and amusement of whom pictures and and whom machinery

THE SIMPLE LIFE

WITH THE POULTRYMAN

TROUBLES IN CHICKEN RAISING

TRANGE as it may seem, chickens do suffer from numerous complaints; yet such complaints may be unknown in a farmyard. The average farmer may not know what is meant by the diseases of poultry. If he should happen to lose a fowl or chicklet, he is content to know the fault, without inquiring into the cause, or even thinking of a remedy. He is, perhaps, too much occupied with the larger interests of the farm, and so leaves his good wife to show alarm and concern about the vagaries of the poultry-house. Indeed, when one reads the possible ailments and diseases of poultry in the average poultry book, with its lists of remedies, one is bewildered, and apt to be discouraged from attempting to keep fowls. But when a breed is chosen and adhered to, its points studied, its difficulties mastered, then disease and loss become fewer to cope with, and easier to over-

The most troublesome and infectious complaint that can affect chickens is that much to be dreaded roup. It has many forms, and usually commences with a slight running at the eves and nostrils, at which stage it is easily cured. A roup pill, given night and morning, with a little mustard, in the soft food, and a drop or two of camphorated spirits of wine, or perhaps terebene, given in the drinking water, will check the cold in its earlier stages, and prevent infection. The infectious stage occurs when the cold spread to the throat or lungs, when it becomes far more difficult to cure. Colds are often contracted through chickens drinking from the same trough. Should the weather be cold and wet, place a small piece of camphor or some drops of terebene in the water as a preventive.

Chickens which have been affected with bronchitis are best removed to a warm, sheltered place, and specially treated. A roup pill may be given every morning for several days, and a teaspoonful of castor oil made warm. The food should be soft and warm, sprinkled with poultry spice or dry mustard. chitis is often so tedious a complaint that it calls for both skill and patience on the part of the nurse; but one's labors are amply repaid when valuable chickens recover and outstrip the others in size and strength.

Chicken cholera is more fatal in its effects than either of the complaints mentioned. Some strains of poultry are more subject to it than others. Chickens only a few days old are mostly attacked, whether hatched artificially or naturally. The droppings are white, then green and slimy. The chickens droop, give faint chirrups, and soon die. The disease is highly contagious, and though many remedies have been put forward, no real cure has yet been effected. It is generally believed that chickens more frequently contract this disease by pecking each other's feathers. When this s detected, it is wisest to remove healthy ones to fresh shelter and another run. A treatment often found efficacious, though homely, is easily administered. A mixture of prepared chalk and ground ginger may be given to these sickly chicks, in the proportion of one teaspoonful of ginger to two of chalk, the whole being mixed with soft food. This quantity would treat a dozen chickens. Of course, as much green food as possible and dry chicken rice must be given as frequently as possible. If the birds are not specially valuable, and appear very weak, it is better to drown them at once, and to save the healthy ones.

Inflammation of the lungs is another fatal' disease and highly contagious.

PROFIT DEPENDENT UPON CARE

The business of poultry raising opens a promising field for all who possess ambition and industry. The cost of raising poultry is small when compared with the high prices they command. For the small amount of money required I know of no other legitimate business that will bring quicker returns than poultry. It is a sure business when one understands it, because you can generally control the conditions which assure success if you will but attend to it. There is money in poultry and will be for years to come. The fact that many fail to make a "go of it" is what makes it profitable. The products of the poultry farm always represent so much cash. The demand is greater than the supply, and so long as this is the case, the careful, hard-working man or woman will reap the results, while the indifferent one will fail.

Our poultry operations may prove successes or failures in proportion to the amount of zeal and energy put forth. The conditions and circumstances surrounding different persons make it impossible for any one to lay down fixed rules that would be a sure guide to success. Experience is the best and only genuine school. Old breeders can only give the beginners pointers to work by. There is no

royal road to poultry culture. There can be no fixed method of judging fowls. Success comes from right methods and these methods must be learned in the school of common sense application. Everyone must work out his or her salvation. There are thousands of poultry keepers in the United States, no two of whom possess the same degree of skill. I have a way that is a way of my own, and it may not come up to what a great many of you have experienced. Never- be kind, quiet in disposition, a good feeder and theless I get good results, and that is what we an excellent mother.

There are people sufficiently versed in is different from that upon mixed farms rehenology to make biddies lay during cold quires different characteristics in the two types. weather when eggs are high. There is little The range animals must be smaller because the profit in keeping hens unless a part of the eggs can be produced in winter and winter prices obtained. The strain must be back of the flock. It is possible by selection, careful breeding and scientific feeding to double the number of eggs which the hen will lay. Give the hen the right treatment and she will repay every kindness if she is the right kind. It is possible to make each hen pay a profit of \$1.50 to \$2.00 per year. A number can make more than this by raising their own feed. Proper food and care are necessary to produce large quantities of eggs. A strong constitution is essential, one which will enable the fowls to digest and assimilate a large amount

In feeding for egg production a valuable lesson may be learned from nature. If we notice fowls that receive the least care and attention lay most of their eggs. in the spring time. Notice the conditions surrounding these fowls. The weather is warm, they have plenty of green food, more or less grain, insects, plenty of exercise and fresh air. If we feed for egg production we will endeavor to make it spring time all the year round. Give the poultry proper proportions of green food, such as vegetables, grain, etc., meat (milk in various forms will take the place of meat), grit, fresh air and plenty of exercise.

A great many make a mistake in feeding too much corn. Chickens should be made to work for every grain they get. To make them do this throw it into a deep litter. Chickens, like people, do not thrive and relish on a perpetual diet of the same kind of food year in and year out. No matter what kind of food may be selected there is no combination suitable for all purposes. First, determine what you intend to do and then feed accordingly. No rules can be formulated for feeding all kinds of fowls, as each flock differs from others. The poultryman must determine for himself which of his hens require special foods, as breed, egg-production and other conditions must be considered. Do not overlook the fact that each hen is an individual and that she has her likes and dislikes, being profitable or unproductive according to surroundings and circumstances.

POULTRY NOTES

Perches should be built low and arranged so they can be easily taken out and cleaned. Uniformity in the size of eggs can best ben obtained by keeping one standard breed of

A small amount of sulphur fed to the poultry during the winter will keep the blood in

Money spent for poultry feed will be returned twofold in the profit derived from the sale of eggs.

Unless fowls are provided with plenty of water during the early winter, they are fiable to contract disease.

Every poultryman should lay in a supply of alfalfa and clover for his fowls during the. winter. Green feed is as essential as grain. Mites have a strong dislike to any strongsmelling essence. Peppermint, wintergreen,

cloves or pennyroyal mixed with water and sprinkled over the nests and building will drive the pests away. Do not think because the weather is cooler-

the lice have quit business. It does not take very many lice to absorb the profits of a flock.

AROUND THE FARM QUALIFICATIONS FOR RANGE ANIMALS

ANGE conditions are so adverse to the conditions on the eastern farms that when we think that most of our breeding stock of the western country is taken from these intense artificial conditions and placed upon the range, where grazing is scarce, and where the weather conditions are liable to sudden changes, we are not astonished at the poor results and come to realize the demand for a breed of animals which will do well under range conditions. But here the question arises: "Can pure bred stock stand these severe conditions or must this range breed be developed by the grading and improvement of the stock already upon the range?" I believe the general opinion agrees with the latter, and

fications which they should possess. The character of any breed depends exactly upon the qualities of the animals taken individually and collectively which are kept for breeding purposes.

if so let us consider the animals and the quali-

In selecting a sire for range cattle he should be of fair size and above all have stamina and constitutional vigor, he should possess a good symmetrical form, have good bone, and transmit his characteristics with certainty. Neither time, distance, nor money should be spared in

buying the sire. In selecting the cow too much care cannot be given. She should be of the same general type as that of the sire, and must possess stamina and constitutional vigor. Too much stress cannot be laid upon these points. Too much stress cannot be laid upon these points. She should be from medium to large in size, have a symmetrical body and possess quality and finish. As she is the mother of a breed she must

The fact that food and shelter on the range

position to be persistent in the matter of foraging is very necessary. Range stock must have good constitution and show no lack of vigor, even if these are obtained at the expense of size, quantity of meat, and smoothness of out-In order to secure these qualifications each and every man should strive for the same end. Harmony should exist between the breeders and by selecting the best animals each year, a good breed for the range would be established in a comparatively short time. In conclusion we must keep in mind that whatever breed is produced must be brought forth and developed

THE DAIRY COW

under the conditions of soil, forage, climate

and handling which must be the lot of its an-

There seems to be no limit to the production of the dairy cow. Year by year new records are made, until at present we have an authentic record of around 1,100 pounds of butter as the product of a single cow during one year. This means an actual product worth \$275 to \$300, besides the calf and the skim milk. Twenty years ago one would have said that this was utterly impossible.

The cows are not only improving in quality, but the man behind the cow is improving still more. We are learning to feed and care for the cow better than ever before. We better undrstand the laws of breeding and are able to breed more to a certainty. We are learning that environment means much to the good dairy cow and adds largely to her comfort.

Along with good warm quarters we must have pure air and sunshine. Nothing will add more to the thrift and comfort of the dairy cow than these two factors. What a feeling of gloom comes over one as he eners a dark room no matter how well it is furnished, if darkness and gloom fill the space it will not contribute to his comfort. The good dairy cow is quite as sensitive and is never quite as well satisfied as when she is lyinguin a warm, light stall, chewing her cud, with the bright sunlight shin-ing all over and about her. The sunlight is life-giving as well as germ-destroying. We should have fewer cow stables and more cow

Again, the cow gives a more uniform revenue than any other stock grown on the farm, and more than any grain crop grown. The cow will, as a rule, under like conditions, give just about the same amount of milk one season with another and the price of butter fluctuates less than any other farm product. We can just about tell the season before what she will do for us next season. That's worth much to the farmer. Year by year as cows increase in quantity and quality their product increases in value on the market. Probably the improved methods of handling the milk, the cream and the butter have much to do with the price, as the quality of our butter has improved wonderfully within the past few years,

thus the greater demand. There is no fear that the business will be overdone, as dairying calls for a higher degree of intelligence and more painstaking work than the average man wants to contribute. The lines of work that can be handled most easily and the products that can be secured with the least attention are the ones that will not suffer. The things that can be done most easily are as a rule the things that pay the least. On the other hand, those things that come by the better exercise of the brain and the closest attention to detail are never over-

The Northwest is certain to be the great source to which our nation must look for her dairy products. Nowhere else does nature so combine forces in growing her most nutritious grains and grasses to feed the dairy cow upon, or a better climate to feed her in, or to manufacture her raw material into those condensed products of butter and cheese that the world at large is calling so loudly for, and is so eager to get even at a high price. Never, before did the pathway of the good, up-todate dairyman look so bright. Forest Henry.

THE FARMER AND THE THOROUGH-BRED

Why is it that the farmer does not raise thoroughbred poultry? This is a question often asked, but seldom answered. The tarmer raises thoroughbred sheep, thoroughbred swine, thoroughbred cattle and often fullblooded horses, but the poultry that roam his place are a digrace to him.

Why is this? Ask the farmer why he keeps thoroughbred cattle, and he at once becomes interested. If he has Jerseys, he tells you that they produce a higher per cent. of butter fat than scrub stock. If he has Holsteins, he tells of the large quantity of milk he gets from his cows. If he has Herefords or Shorthorns, he proves to you that they will develop into larger and better steers for the market than any other breed. Then, again, he will tell you that they look much nicer and bring a better market price than the mixed bloods. He can find more ready buyers and he takes more pleasure in raising thoroughbreds. Ask him why his grain and always have poor horses, and for

sheep and swine are thoroughbreds and you receive the same sort of an answer. Ask him why he keeps full-blooded horses and he tells you that they find more buyers, because they attain greater size and possess more style and action, and that it costs no more to raise fullblooded horses than it does to raise common

Did the farmer ever hear arguments like these in behalf of thoroughbred poultry? Did it ever occur to him that the Leghorn will lay more eggs than his scrubs, just as the Holstein gives more milk? Did it ever occur to him that the Cochin or Brahma will attain greater weight than his scrubs, just as the Herefords or Shorthorns attain more weight than common stock? Did he ever happen to think that there are general purpose breeds of chickens that are more profitable than his dunghills, just as the general purpose horse is more pro fitable to him than any other? The Plymouth Rock, the Wyandotte or the Orpington is an ideal farmers' fowl. If these things have been explained to him and if he sees them in the right light, then that farmer has a flock of thoroughbreds and he is as ready to argue on their good points as he is to show the good points of his horse, his cow, or his sheep.

On some farms you find the place overrun by a lot of scrub chickens of every conceivable shape and color, and here and there you may see one in the last stages of some disease, or the body of one that has passed to the great beyond. The house which has been turned over to them or which they have taken possession. of because it is of no use, is seldom or never cleaned. The eggs are laid everywhere-under the barn, in the mow, in the family carriage or in the stable, or anywhere a nest can be made. Now and then a hen appears on the scene, followed by a brood of sickly chicks which she has hatched in some out-of-the-way place on her own hook. During the cold weather there is not an egg laid, and it is doubtful if there is any time of the year when the hens pay for their keep.

You may say that this picture is somewhat. overdrawn. In some cases it is, and I am glad of it; in others it is not half as bad as the state of chicken affairs. There are far too many farms where such a state of things exists, but the poultry shows and the poultry press are slowly but surely opening the way for the thoroughbred.

Perhaps this farmer visits a poultry show and there has his eyes opened to the fact that he is behind the other fellow, or perhaps it is a poultry paper which does the trick, but once the change is made, no argument is strong enough to turn him back to scrub stock. The old shed gives way to a new house and yards. The scrubs are sold and a pen of thoroughbreds. are placed in the new quarters. A poultry paper is subscribed for and the farmer becomes a careful reader and student of poultry news; in other words, "a chicken crank." He gives his fowls the best care possible, and in a few years he has a large flock of thoroughbreds of which he is as proud as of his other stock. Suppose we inquire as to some of the ar-

guments the farmer now advances in behalf of thoroughbred poultry. A thoroughbred Leghorn will lay more eggs in a year than a scrub. A Plymouth Rock or Wyandotte will produce more meat and eggs than any mixed blood. A Cochin or a Brahma develops into a bigger, better bird than a scrub. The thoroughbred flock is even in size and color; the scrub flock is of all shapes, sizes and colors. It costs no more to keep thoroughbreds than to keep scrubs. The man who keeps thoroughbreds generally keeps an account and thereby knows his loss or gain. Are these reasons worth anything? If so, then why does not the farmer raise thoroughbreds?

FEEDING THE HORSE

Fully three-fourths of the ailments of the horse are caused by injudicious feeding. It is the worst of folly to assume that a horse should have all the feed he will eat. While it has been proved beyond a doubt that we can maintain horses while at work, on either clover or alfalfa hay, this fact is no reason for assuming that it is advisable to do so. Where several farm teams are kept for operating the farm, if they are ordinary farm chunks and not worked during the winter months one is probably justified in wintering them without grain; but usually enough more grain will be required to put them in working condition in the spring to justify the feeding of a limited amount of grain during winter. However, if one keeps good horses it will never pay to artempt to keep them on roughage alone. If a horse or a colt is not worthy of being fed grain he is certainly of the class which will not pay for production. Unlike the cow, the horse's digestive system is not adapted to coarse, bulky foods. The average capacity of the cow's stomach is 180 quarts, while that of the horse is but 14 quarts. The horse has but one small stomach, while the cow has four big ones. Ruminating animals digest a higher percentage of the nutrients of their feeds than do horses or non-ruminants.

From a study of the digestive system of the horse one can plainly see the necessity of feeding concentrated foods. If any change is to be made in the feeding of the horse let it be more grain and less roughage. The harder the work and the hotter the weather the higher the per cent of grain.

Every observing man well knows that the feeder is of greater importance, than the amount of feed. Some men will feed lightly of both hay and grain and have their horses always healthy and in good condition, while others will feed Jarge amounts of both hay and

this reason no rule can be laid down about the amount to feed. A 1,200-lb. farm horse, while at work, will require about 12 to 15 pounds of hay and from 10 to 12 pounds of mixed grains daily to maintain his weight, with a nutritive ratio of about 1 to 7.

The horseman who keeps good horses and keeps them in good condition will vary the feed with the work the horse performs. Not over half the amount of grain should be fed to the horse when idle that is fed while at work.

FOR THE COMFORT OF THE HORSE

The efficiency of the horse during the spring months will depend very much on the condition of the shoulders, and this will odepend more than anything else on the make and fit of his collar. If the collar is not made of the proper material, if it is not fitted to the horse so as to press evenly upon the shoulders, a sore shoulder will result. Naturally the horse will sweat, more or less dirt will find its way under the collar, it will gall, and if this condition of things continues will gradually get worse until the farmer in mercy, even at a serious loss to himself, will feel that he must give the horse a rest. Neither man nor horse can work well unless he works in comfort. If the hired man is suffering he can complain and kick, and if relief does not come he can leave; but the horse can not complain or tell what is the matter with him, and if he does kick, it may not strike the right person.

A merciful man will show mercy to his beast; but leaving out the quality of mercy, the sensible man looks after profit and therefore, aims to get the maximum service from his teams. No horse with a sore shoulder, whether in its incipient or later stages, can do profitable work.

We therefore ask our readers: What is the best kind of horse collar? Should it be soft or hard? That's the question. Is there any better material than leather? When a horse begins to fret, showing that his shoulder is sore, is it wise to put a pad under the collar or not? Similarly, when a horse has a sore back, is it best to put a blanket under the harness or not? We have heard a great deal of late about the steel, zinc-lined collar. What do our readers know about it? Have they used it? If so, we would be glad to hear from you. What we are after now is to find out what other collars have been tried by our readers besides those that have

been in use for generations past.

We have found in our own experience that putting anything soft under the collar when the shoulder was sore made it worse. It made the horse sweat worse than before, and hence the sore became more and more aggra-

When a horse has a sore shoulder, what particular thing causes it? What is your way of treating it? Have you ever tried a hameless collar? If so, how did you like it? You see, we are just feeling our way to find out, if possible, how sore shoulders in horses can be prevented next summer.

If a man has used several different kinds of collars in the last twenty or thirty years, his testimony on this point is valuable. one thing we are certain, that every man who has the right kind of feeling toward one of the best friends he ever had, the horse, would like to have him work with the maximum of comfort. In fact, to do the maximum of work, he must have the maximum of comfort. Now, what kind of a collar have you found to be the best and most easily adjusted to the shoulders of different horses? - Wallace's Farmer.

HEAVES CAUSED BY HAY

A noted veterinarian says that one full feed per day of hay is enough for a horse; that because the work-horses are busy in crop time they only get one full feed of hay every twenty-four hours, but in the winter are frequently allowed to stand and eat hay all day. He says that a horse to be in perfect health should have the stomach emptied of the previous meal for two or three hours before he is given another. If such is not the case, digestion will not take place in a perfect manner, and disease is likely to result. There is a remarkable sympathy between the stomach and the lungs, because of the fact that the same nerve trunk supplies nerve forces to both organs. When the stomach is deranged from improper feeding the lungs are liable to become sympathetically affected, and heaves often result. Care should also be taken that a horse should be fed no dusty or musty hay. This dust is as light as air, and the horse in breathing draws it right into the lung tissue with every breath, and this substance being an irritant, is very prone to develop the heaves. If no better hay can be obtained, the dust should be laid by sprinkling with water, when the horse will not breathe it, but will be swallowed with his feed and probably do him no harm; but when at all possible only bright, clean hay, free from dust, should be fed to horses. Again, no horse is in fit condition for active exercise with a stomach distended with hay, because the stomach situated as it is right behind the lung space, if full, bulges forward into the chest to such an extent that the lungs have not room to properly expand, and cannot perform their functions properly; and anything that in-terferes with the functions of the lungs predisposes to heaves. In many cases if farmers would feed one-third less hay to idle horses in the winter months they would come out in the spring in better condition.