

# TREASURE STATE FARM AND LIVESTOCK

## CO-OPERATION IN DAIRYING PAYS

PROFITABLE TO FARMERS TO HIRE COMMUNITY EXPERT TO WATCH RESULTS

Efficiency as Much Needed on Farms as in Factory, and Unless a Farmer Has a System, He is Sure to be Losing at Least a Part of His Profits.

There are so many leaks in the dairy business that only by the use of the best business principles can it be made permanently profitable. Individual cows must each make a profit over the cost of feed; this can be determined only by weighing each cow's milk and the feed she consumes. The old argument that the best cows are known may have some foundation, but few men know the poorest cows. No dairy is better than its average production. If this is too low, the herd is not paying a profit. Business principles must therefore be applied to lowering the cost of milk production.

Efficiency is as necessary on the farm as in the factory. Few men feed their cows in proportion to the quantity of milk produced, yet what could be more simple and more nearly right? With little regard for her needs, feed is put before the cow in plenty if it is cheap and in less quantity if the price is high.

**Must Keep Books**  
Cows use about 60 per cent of their food merely to keep their bodies working, and it is the quantity that is fed above this fixed necessity that furnishes the material for the milk. Too often the dairyman says: "I

would do all the up-to-date things if I had time." Can the storekeeper afford to run his business without keeping books? Yet that is what the farmer is doing.

Working in co-operation, dairymen can obtain the benefits of business methods at a very small cost through the organization of a cow-testing association. An organization of this kind that hires an expert to determine the feed cost of milk or fat production for each cow in the herds of the members is easily possible, and in fact a number have already been organized and are working successfully in this state.

**From Farm to Farm**  
Such an expert travels from farm to farm, spending usually one day at a place. Each cow's milk is weighed and tested, as is her feed. An account is opened in the ledger for each animal and at the end of the year the profit or loss of each one can be ascertained. The heifers of good cows should be selected and the poor cows should go to the slaughterhouse, otherwise they may be the means of ruining the owner's business. A cow-testing association is a co-operative organization with local officers, and one that can be of use also for advertising the sale of cattle. The results obtained with such advertising have been remarkable.

The dairy business is well adapted for co-operative organization, and concerted effort by dairymen usually means much greater profits on milk and cream through the elimination of waste, the application of more economical methods of production, and manufacture, and the development of more productive cows.

**A Lady of Distinction.**  
Is recognized by the delicate fascinating influence of the perfume she uses. A bath with Cuticura Soap and hot water to thoroughly cleanse the pores. Followed by a dusting with Cuticura Talcum Powder usually means a clear, sweet, healthy skin.—Adv.

## VETERINARY DEPARTMENT

Questions addressed to Dr. M. E. Knowles, veterinary editor, Helena, will be answered through this column.

For the convenience of our subscribers and readers, a number of horses, cattle, sheep, swine and dogs, is intended for those subscribers where a veterinary surgeon is not available; as expense in securing service in such circumstances is prohibitive. It is requested that subscribers write plainly, giving all the symptoms; age, sex, and duration of disease, injury, or lameness, and treatment, if any, employed.

**Veterinary Editor:** Can the swine breeding and feeding industry be made safe from hog cholera and a profitable venture? Please advise regarding "clear concentrated" hog cholera serum, and bloody serum, in common use. G. W. S.

The writer is acquainted with several farmers and stock-growers who are eminently prosperous through swine feeding and breeding, by merely keeping their swine free from hog cholera through simultaneous or double vaccination, that is, giving virus and clear concentrated serum at the same time.

It being necessary and required by State regulation that qualified veterinary surgeons should be present at all such vaccinations, the writer has been brought about between farmers and veterinary surgeons, who administer the treatment, in which both share in the expenses and profits of such business.

A marked disappointment has occasionally puzzled veterinarians who are in the practice of using bloody serum, since it sometimes happens that, after vaccination, that a so-called "break" occurs, being the appearance of cholera among the herd after such vaccination.

The writer has vaccinated many hundreds of pigs and young swine with clear concentrated serum and positive virus "Lederle," with not a single break or recurrence of cholera. Moreover, it is possible of this to be done by the use of a feeding safely possible and profitable, and the following facts I trust will enlighten you relative to the control of hog cholera with clear and concentrated anti-hog cholera serum.

It is common knowledge that in every hog raising country of the world, hog cholera is being recognized as the most serious and most dreaded of all diseases. The statistical data published in this country as well as in foreign countries proves beyond a doubt that hog cholera is the greatest menace to the swine industry, often-times causing the ruin of the industry, and even affecting the prosperity of hog raising localities.

This was particularly the case before the advent of the preventive treatment which was developed as a result of the wonderful discovery of the cause of hog cholera by Dorset, McBride and their co-workers of the Bureau of Animal Industry. From the discovery of the cause it was only a step to the development of a preventive treatment for which credit is due to the same investigators and which at the present time must be considered as the greatest benefit to the swine industry.

Not only has the discovery of Anti-Hog Cholera Serum proved to be efficacious for the control of the disease, but as a result of the development of this product the simultaneous treatment has become available with which it is now possible to confer upon susceptible hogs a life-long immunity. In the simultaneous treatment we have at our command a procedure whereby a single handling of the hogs will protect them against even the severest kind of exposure to hog cholera infection. Since the advent of the Anti-Hog Cholera Serum it has conclusively and irrefragably been demonstrated that the present time it is regarded as an indispensable product for successful hog raising.

Hog Cholera Serum as originally developed is being today employed to a very large extent for the vaccination of hogs. It is prepared by injecting into immune animals large quantities of food from hogs sick with cholera. The blood contains the virus of the disease in the highest concentration and even a few drops of this blood would kill a susceptible hog; whereas an immune hog would eat and trample upon large quantities of such infected blood when introduced into the blood stream. As a result of the injection their immunity is increased and they are then known as "hyper-immunes." Such hyper-immune hogs are then bled. The blood is defibrinated, that is, it is freed from the substances which cause the clotting of the blood and the resulting product is known as "clear concentrated serum." In the above description of the preparation of Anti-Hog Cholera Serum only the salient points have been brought out, since it is not intended to confuse the reader with many of the minor details which are required in the successful production of a potent serum.

Until recently very little progress had been made in the production of Anti-Hog Cholera Serum. While it has been recognized that in the form it has been prepared it represents one of the crudest products we had at our command for the control of an infectious disease, yet in Anti-Hog Cholera Serum we have one of the most reliable biological products at our disposal. A few years since we can only deny the regrettable fact that the development of the laboratory aspect of this product has been lagging far behind and that very little progress, until recently, has been made in producing this product in an improved manner to justify its wonderful effectiveness in the control of this dreaded disease.

It should be considered that in the prevention and treatment of a disease of such vast importance to the country's live stock industry as hog cholera, the quality of the product used for its control should be beyond reproach, especially so, since the effectiveness of the treatment is being justly recognized.

It is undeniable that all establishments engaged in the production of Anti-Hog Cholera Serum are making all efforts to produce a potent product, but as it is produced today by most of the laboratories, it represents only defibrinated blood from hyper-immunized hogs, a product in its very crudest stage of development as far as the physical makeup and its freedom from disease producing germs is concerned.

**Preparation of Clear Serum by Lederle Antitoxia Laboratories.**  
The production of a clear Hog Cholera Serum without the presence of the virus cells was practised in different countries of Europe and also in isolated cases attempts were made in this country to prepare such a product. The small yield obtained from such serum was the greatest deterrent of the different manufacturers to the production of such a clear serum. Dorset, recognizing this fact as a disadvantage for the development of a clear Hog Cholera Serum, undertook investigations along this line which developed in a method whereby practically all protective substances can be recovered from the blood of hyper-immunized animals. It is this credit that such a clear serum may be produced at a cost not much higher than the ordinary defibrinated blood.

In the method of preparation of bloody Anti-Hog Cholera Serum as generally practiced, it is impossible to prevent impurities from outside sources. Aside from this there is the possibility that the hyper-immunized animals may contain in their blood germs which might prove harmful to animals injected with the product. Furthermore, the so-called "bloody" hog cholera serum, in which the red cells of the blood which have no value whatever in the production of immunity; this fact has been conclusively demonstrated. It must also be recognized that these red cells are injected with the serum they prevent rapid absorption and act as irritants at the point of injection, fre-

## AYLESBURY DUCK PROFITABLE FOWL

ONE OF OLDEST KNOWN BREEDS IT IS STILL A FAVORITE IN ENGLAND

Although It Has Been Supplanted to a Great Extent by the Pekin in the United States, Many Farmers Find it a Profitable Breed for Marketing Purposes.

Though one of the oldest known varieties of domestic ducks, the Aylesbury is still the favorite breed in England.

According to many writers white ducks have been known for centuries and there seems to be no account of the origin of the Aylesbury. It is the

giving rise to abscess formation. Thus, a serum has not fulfilled the requirements of an ideal and effective biological product.

Serum containing red blood cells (whole blood or bloody serum) cannot be properly sterilized either by heat or filtration, for when heated to a point where the disease producing germs are destroyed, it solidifies. On the other hand clear serum can be safely sterilized by either of the methods. By such sterilization the ordinary germs which are dangerous to hogs are readily eliminated, and, by freeing it of red blood cells it is rendered more easily and completely absorbed, thereby insuring the maximum protection within the shortest time. The fact should not be lost sight of that by eliminating the corpuscular elements from the hog cholera serum it may be injected in proportionately smaller dosage.

Unfortunately, some manufacturers of the clear Anti-Hog Cholera Serums which are now offered replace the blood cells removed in its preparation by the addition of salt solution, thus building up the serum to the original volume of the bloody serum. There is no scientific justification for such dilution. The addition of water adds nothing to its immunizing value, and serves only to confuse the veterinarian or the hog owner.

Adding water naturally reduces the cost of production per cubic centimeter, and also reduces the immunizing value of the serum by the amount of water that is added. There is no advantage whatsoever in red diluting the clarified serum, especially in this so since the advantages of administering biological products in higher concentration (that is, in smaller dosage), is now generally recognized.

The striking advantages of a clear (concentrated) serum, "Lederle," are:

Freedom from disease producing germs and other foreign materials, thus avoiding complications and ill effects.

Refinement of the product, permitting rapid and complete absorption and giving maximum immunity in the shortest time.

Provision for cleaner and more accurate technique, thereby simplifying the vaccination.

Sterility, promoting keeping qualities of the product.

leading market duck of England. In America it has been supplanted by the Pekin duck, but many American farmers prefer it to the latter breed. English epicures prefer white skin and light legs and beaks on their table poultry, both ducks and chickens, while American tastes prefer yellow skin, bills and legs. For marketing purposes the Aylesbury is easily the best of English market ducks on account of its rapid growth and early maturity. Like the Pekin, Aylesbury ducklings weighing from 4 to 5 1/2 pounds can be produced in from seven to nine weeks. At this age and size they bring best prices and some sections of Great Britain are devoted entirely to this duck rearing industry. Quickness of growth is an important factor in respect to the profit gained as the young ducklings are heavy feeders.

As layers Aylesbury's are considered second to the Pekin, many females laying as many as 150 eggs in a year. It is important to the commercial duck grower that these eggs be laid at the right season and be fertile. For this reason he hatches his breeding ducks early and mates a sufficient number of drakes with his flock to insure fertility. Aylesbury breeding ducks require some range and swimming water to obtain best results.

Mature Aylesbury drakes weigh 9 to 10 pounds, ducks 8 to 9 pounds,

## NEURALGIA

or headache—rub forehead, temples and back of neck with Vicks. Melt a little in a spoon and inhale the vapors.

# VICKS VAPORUB

Over 17 Million Jars Used Yearly

## BUY A PERCHERON STALLION

The largest breeder of Percheron horses on the American continent, the Bar U Ranch, is overstocked with 100 young Percheron stallions, black and grays, weighing from 1,800 to 2,000 pounds. These horses have been raised in the open and are hardy, and more desirable for the breeder. Montana is short of good draft horses and this may be your opportunity. Send for our catalog.

GEORGE LANE  
CALGARY, ALBERTA

## ROSES

**PRAIRIE KING**—Hardy red rose, blooms all summer and first year planted. **PRAIRIE QUEEN**, climbing, very hardy. Splendid bloomer. Two-year field grown plants, \$1.50 each. One of each, postpaid, \$2.50. These two roses have given good results in Montana. Full line of hardy nursery stock. Write for price list.

W. M. TREADWELL, Nurseryman  
Great Falls, Mont.

## HEART O' THE VALLEY HAMPSHIRE SWINE

BRED SOWS BRED GILTS BOARS  
Cherokee Lad, Gen. Tipton Breeding  
Priced Reasonably—Guaranteed  
Grand Champion Herd Northwest '21-'22  
HAYES & HARTER  
Grants Pass, Oregon

## Agricultural and Grazing Logged Off Lands of the Anaconda Copper Mining Co., on Easy Terms

Dairying is a type of farming best adapted to the timbered sections of western Montana. Most of the land can be converted into pasture at very little expense and dairy cows will yield a splendid profit from the land without the necessity of removing the stumps, although a sufficient acreage must be put under the plow to supply winter feed. In connection with dairying, hogs and poultry should take an important part. All fruits, berries and garden truck thrive; field crops of grain, clover, timothy, potatoes and stock roots do well.

You are buying at values fixed by experienced appraisers, stripped of promotion charges, commissions and other trimmings, which are usually added before it reaches the farmer. We will aid you in selecting a location that is adapted to your needs.

## BLACKFOOT LAND DEVELOPMENT CO.

Drawer 1590 Missoula, Mont.

## BLACK-LEG AMONG YOUNG CATTLE

Can be Prevented through Life by the use of **LEDERLE BLACK-LEG AGGRESSIN**

Aggressin is recommended by Montana State Veterinary Department, United States Bureau of Animal Industry; and all reputable Veterinary Surgeons advocate it above all Black-Leg vaccines.

Insure Your Young Cattle With It For Life  
Can be purchased in 10, 20, 50 and 100 dose bottles at 15 cents per dose, from

DR. M. E. KNOWLES, State Director, HELENA, MONT.  
Or any reputable Veterinary Surgeon in Montana

## Watch Shelby Grow!

TULSA OF MONTANA

Will you read the profits of Shelby real estate in your bank book?

Fortunes were made in Smackover, an oil town, which increased in population from a hamlet of 300 inhabitants to a city of 15,000 in a year. Shelby should do better. In addition to the immense oil fields at our door, Toole County Irrigation will cause a large growth in our city.

The Toole County Irrigation District covers approximately 207,000 acres tributary to Shelby. The consensus of opinion is that before the end of 1923, Shelby will have a population of over 10,000. Shelby will be the Tulsa of Montana. In a few years Tulsa grew from a town of 1,200 to a city of approximately 120,000 people, making fortunes for those who had the foresight to buy real estate. Hundreds of other oil cities have had similar increases in population. History repeats itself, and now Shelby is your opportunity. When you buy property in Shelby, you are not betting on a single well, but you are investing your money on a general average, backed by a large area of land, and in addition, you have the security of a large area of land, which when irrigated, will produce equal with any land within the United States, evidenced by the large yield of wheat during the years of 1915 and 1916, when the land had sufficient moisture.

We are offering Shelby's choicest residential section to the city. Our addition is only one and one-half blocks from our newest and best hotel, five blocks from the court house. Although our addition has only been on the market four weeks, there are already started, or about to be started, \$150,000 worth of buildings on the addition.

Our Prices Range From  
**\$125 to \$300**  
PER LOT

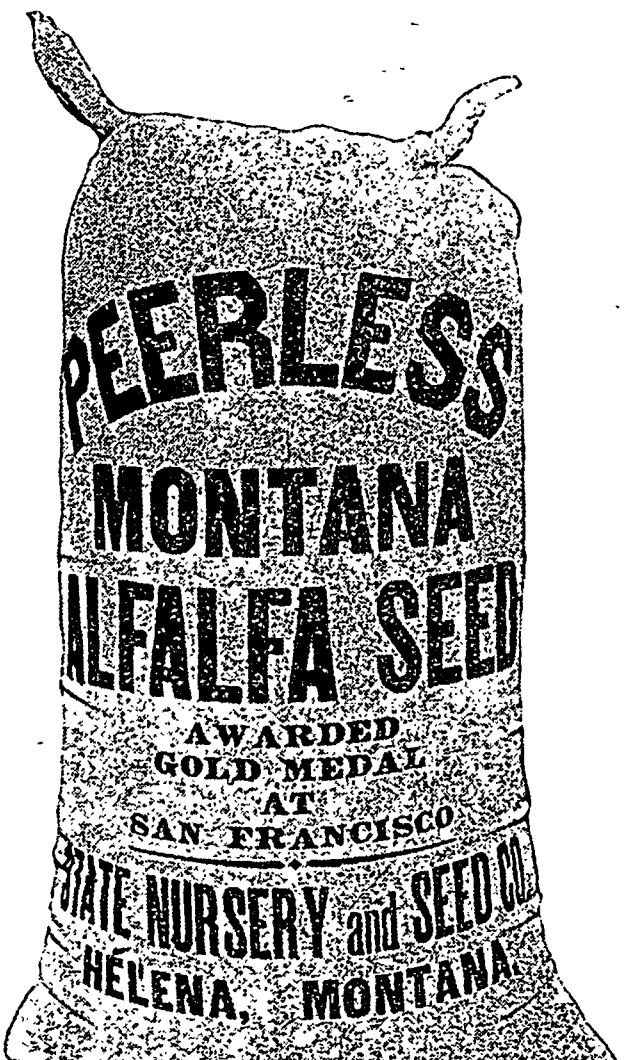
Terms: One-Third Cash  
Balance in Twelve Equal Monthly Payments

For business location, trackage, etc., SEE US. Reap the benefits of our rapid growth. Fortunes will be made here. Opportunities for every line of business. Maps and further information upon request.

**JAMES A. JOHNSON & CO.**  
REAL ESTATE AND FINANCIAL BROKERS  
SHELBY, MONT.

## ALFALFA

HARDY MONTANA  
"PEERLESS" BRAND  
Montana's Highest Grade  
Large Stocks of  
GRIMM,  
LISCOMB,  
COSSACK, and  
HARDY TAP ROOT  
"THE WORLD'S BEST"



## 1923 SPRING CATALOG

NOW READY  
A Postcard Will Bring It to You  
130 LARGE PAGES  
FULLY ILLUSTRATED  
Covering Every Requirement for the Farmer, Gardener and Poultryman

## Montana Corn

SPECIALLY GROWN FOR SEED  
Our growers secured thirty-two first premiums this season. See our Catalog (Page 105) and Colored Plate Outside Back Cover.

## "RED BOBS" WHEAT

SEE OUR CATALOG—PAGE 102  
A beardless hardy spring wheat of excellent milling quality, somewhat similar to Marquis but ripening earlier by 3 to 4 days. The variety shows up particularly well on dry land, having produced 65 to 70 bushels per acre the past season. Our grower reports it the earliest of all spring wheats. U. S. and Canadian experiment stations report the variety earlier than Marquis and the Moccasin. Montana station reports Red Bobs consistently out-yielded Marquis.  
Our stock was grown from seed secured at \$24.50 per bushel from the Canadian Champion Wheat Grower, Segar Wheeler.  
SEND FOR SAMPLE AND QUOTATION

## STATE NURSERY & SEED CO.

HELENA ESTABLISHED 1890 MONTANA  
THE LARGEST AND MOST COMPLETE ESTABLISHMENT OF ITS CHARACTER IN THE NORTHWEST

