







Rare BK,
S
1
.568
v. 64
1903

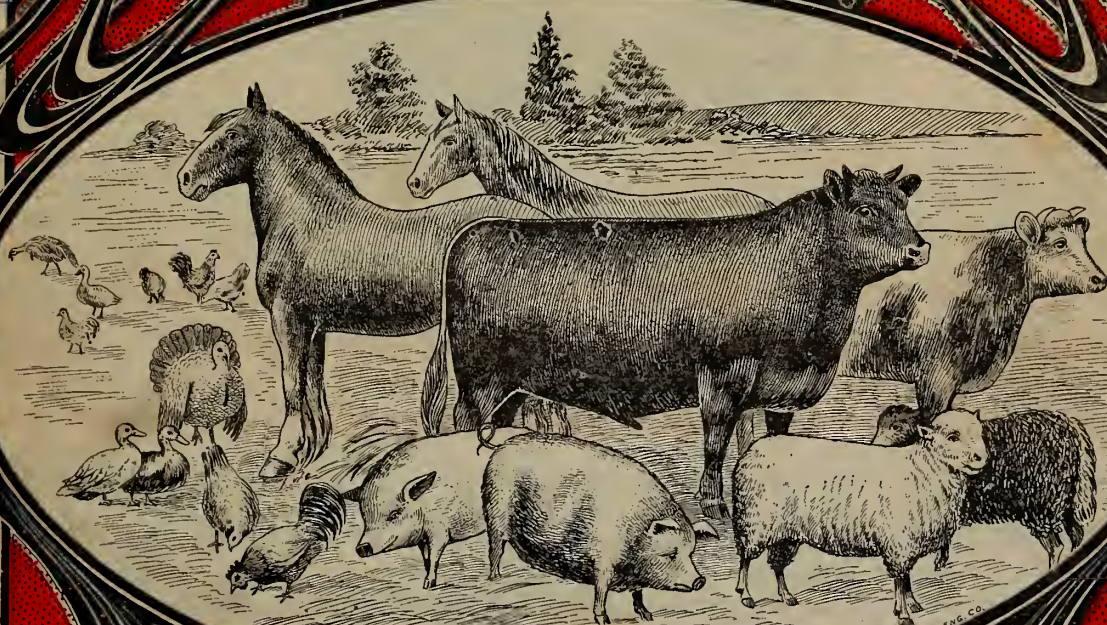
VOL. 64 No 1

ESTABLISHED 1840

The

SOUTHERN PLANTER

JANUARY 1903



DEVOTED TO
AGRICULTURE, HORTICULTURE,
TRUCKING, LIVE STOCK
AND THE
FIRE SIDE.

The
SOUTHERN PLANTER PUBLISHING CO.
RICHMOND · VIRGINIA

The GASOLINE ENGINES which make such Engines famous.

The Engine which the farm-hand can handle. Success beyond question and merit above all others. If you think we say so because we sell them, ask some of those who have bought them. There is nearly as much difference in Gasoline Engines as there is between a Locomotive and an Ox Cart.

ALWAYS READY TO
START, SAW WOOD,
PUMP WATER, SHELL
CORN. From 1½ Horse
Power to 50 Horse Power.
Mounted on Wheels or
Not.



IF YOU DO NOT OWN
A GASOLINE ENGINE
IT MUST BE BECAUSE
YOU HAVE NEVER
KNOWN WHAT THEY
ARE, WHAT THEY
WILL DO, AND HOW
NECESSARY THEY
ARE.

A few who have them: Harper Dean, Henrico Co., Va.; E. B. Addison, Richmond, Va.; S. E. Pender, Greenville, N. C.; W. I. Everett, Rockingham, N. C.; E. B. Howie, Manchester, Va.; Geo. D. Thaxton, Henrico Co., Va.; W. C. Reed, Keswick, Va.; Jno. C. Robertson, Forest Hill, Va.; Jos. P. Garrett, Edgewater, Va.; S. W. Anderson, W. Va.; Edward Scott, Warren, Va.; William and Mary College, Williamsburg, Va.; T. W. Wood, Virginia; W. H. Purdy, Dinwiddie Co., Va.; J. E. Cox, Ashland, Va.; Thos. S. Martin, Scottsville, Va.; James H. Dooley, Richmond, Va.; Henry Clay Inn, Ashland, Va.; and any number of others.

RICHMOND ENGINE AND PUMP COMPANY, Richmond, Va.

FOR THE TOBACCO CROP

—USE—

“STAR  BRAND”

GUANO,

IT'S THE BEST.

ALLISON & ADDISON, BRANCH VIRGINIA-CAROLINA CHEMICAL CO., Richmond, Va.,

—MANUFACTURERS.



The Southern Planter.

DEVOTED TO

PRACTICAL AND PROGRESSIVE AGRICULTURE, HORTICULTURE,
TRUCKING, LIVE STOCK AND THE FIRESIDE.

Agriculture is the nursing mother of the Arts.--XENOPHON.

Tillage and pasturage are the two breasts of the State.--SULLY.

64th Year.

Richmond, January, 1903.

No. 1.

1903.

In our opening article in the issue for January, 1902, we remarked that a new era was opening up for the farmers of the South, and commenting on this said: "This era has in it more promise for the future than any which has preceded it since the country was first settled. The South, in the near future, is to become not merely the producer of raw staple crops as in the past, but the manufacturer of these raw staples into finished products in the shape of cotton cloth, beef, mutton, hog meat, milk, butter, and the high priced luxuries of the table in the shape of fruits and vegetables. We shall have at home a market for a large part of these products, and we shall also have manufactured at home and largely from home produced materials, the mills, machinery and means for the making and transport of our surplus products. To the farmer, this development of our resources means a call for a higher degree of intelligence, a more perfect understanding of the laws governing the successful production of crops, and the profitable conversion of those crops into the finished products; and above all, it means the conversion of the farmer into a successful business man. It means the utilization of all the products of the soil in the most economical manner, so that that which is produced with labor, which means cost, shall return its cost back to the pocket of the producer with the largest profit capable of being realized. To accomplish these results, it will be necessary for the farmer to understand much more thoroughly the laws governing the growing of crops and the feeding of the same, so that they may be made to yield maximum returns; and it will also require that the

science of live stock husbandry shall be better understood than ever in the past. The farmer of the South, in order to meet the demands which this development of her manufacturing industries is going to entail, will require to understand how to breed and feed the thousands of fat cattle, sheep and hogs, which the workers in her mines and factories are going to consume, and how to secure from the cows the milk and butter which the households of these workers are going to demand. In the past, the North and the West have largely supplied even the requirements of the farmers themselves in these respects, and have met practically the whole demands of the cities. The result is seen in the wasted character of most of our lands and the constant complaint of thousands of farmers that "farming does not pay."

Every day that has passed since these words were written has only tended to confirm and emphasize what we then said. The marvellous development of Southern prosperity, the constantly increasing number of our manufacturing plants, and the daily increasing numbers of our people, who find highly remunerative employment in these plants, and to obtain which leave the country and take up their residence in the cities and towns, has worked almost a revolution in the condition of agriculture in the South. Thousands who were producers of agricultural staples are now consumers of these articles, and with their increased prosperity are, together with the long-time residents of the cities and town, consumers, not only of the staples but largely of the luxuries of life. In the era now past a very large proportion of the staple necessities of life for the people of the South, in the shape of beef, mutton, bacon, lard, butter and cheese, have been up

plied from the North and West, and the opinion has been held that the South could not produce these necessities profitably in competition with the North and West. The wonderful prosperity of the whole country and the changed conditions of the West, where the area of free range for live stock has been so much curtailed by settlement and conversion of the lands into enclosed farms, has completely changed the conditions affecting the production of the staple products of the West, and caused them to so advance in price as to render it beyond question that the South can well afford to produce these articles, and in addition many of the luxuries of life, if only our farmers will equip themselves for the task. This equipment means not merely the establishment of herds and flocks to supply the beef, mutton, bacon, milk and butter which the people need, but the knowledge to enable them to make the change in their system of farming which these herds and flocks will entail if their management is to be profitable. The census returns go to show that the acquisition of live stock in the South is already making considerable headway and creeping up gradually in numbers to those which existed in the South before the West was opened out to settlement, and when the South, East and North made their supplies at home.

In 1850 Virginia, including West Virginia, had 317,619 dairy cows. In 1870, this number had been reduced to 188,471. In 1890, the number had increased to 281,876. In 1850, Virginia had 758,658 other cattle. In 1870, this number had been reduced to 323,272. In 1890, the number had grown to 543,636. In 1850, Virginia had 1,310,004 sheep. In 1870, the number was 370,145. In 1890, the number had grown to 392,125. In 1850, Virginia had 1,829,843 hogs. In 1870, the number was 674,670. In 1890, this number had grown to 946,443. North Carolina had in 1850 221,799 dairy cows. In 1870, the number was 196,731. In 1890, this number had increased to 233,178. In 1850, North Carolina had 471,711 other cattle. In 1870, this number had been reduced to 324,431. In 1890, this number had increased to 391,340. In 1850, North Carolina had 595,249 sheep. In 1870, this number had been reduced to 463,435. In 1890, the number was 208,812. In 1850, North Carolina had 1,812,813 hogs. In 1870, the number had been reduced to 1,075,215. In 1890, the number had increased to 1,300,469. South Carolina had in 1850 193,244 dairy cows. In 1870, this number had been reduced to 98,693. In 1890, the number had increased to 126,684. In 1850, South Carolina had 584,442 other cattle. In 1870, this number had been reduced to 150,610. In 1890, the number had increased to 216,214. In 1850, South Carolina had 285,551 sheep. This number has decreased each decennium until in 1890 the number was only 52,436. In 1850, South Carolina had 1,065,503

hogs. In 1870, this number had been reduced to 395,999. In 1890, this number had increased to 618,995. Coincidentally with this increase, there has undoubtedly been a great improvement in the quality of the animals kept.

This improvement has been much more marked in the last decennium than in any other period, and it would not probably be an exaggeration to say that the average increase in weight of the carcasses of beef, mutton and hogs has been increased nearly one fourth, and in productive capacity in milk and butter of the dairy cows of nearly the same quantity. The South is yet a long way behind the West and North in the average quality of the stock kept, and, as a consequence, a long way behind those sections in the average profit made in handling stock. To overcome these drawbacks has been one of the objects which *The Planter* has kept steadily in view ever since it came into our hands. We have striven month by month to bring before the farmers of the South the necessity for attention to live stock husbandry and the importance of this factor in the improvement of our lands and the economic condition of the farmers. To secure this end, we have striven to encourage the reading habit amongst farmers by reducing the cost of this journal to a minimum and by making it the medium through which the experts and master minds in live-stock husbandry should popularize their teachings. We have in this way sought to overcome the prejudice so deeply rooted in the South against so-called "book farming," and by making the journal the exponent of practical as against theoretical farming have endeavored to evoke an intelligent and understanding comprehension of the science of agriculture, so that instead of working by "rule of thumb," farmers may work in the light of the rules of science and practice. This issue we have made a special live stock number, and illustrated it with pictures of some of the leading breeds of live stock adapted to Southern conditions. The articles accompanying these pictures are written by leading experts in the particular lines which they treat upon, and we are satisfied that the information to be found in this issue will be of constantly increasing value to every reader. It is our intention during the year to continue our monthly talks on "Work for the Month," and our replies to questions through the "Enquirers' Column," and to make each department of the journal as full of information on the particular specialty therein dealt with as our limits will allow. We appeal to our friends to give us their assistance in increasing the circulation of *The Planter*, assuring them that our whole concern and thought will be to advance the prosperity of Southern farmers.

Mention the *Southern Planter* to your friends.

Farm Management.

WORK FOR THE MONTH.

The higher range of values for all agricultural products which has now continued for more than two years still holds good; indeed, in respect to some of these, prices have still further advanced during the year just closing, and this satisfactory condition of affairs for the farmer will, we think, be not likely to soon come to an end, certainly not so long as labor continues to be so well employed as at present. The consumption of all the staple products of the farm, and of most of the luxuries, some of which, like tobacco, we produce largely in the South, is enormous, and it would require an immense over-production of these to seriously affect market values whilst business continues good. Whilst we have had large wheat and oat crops, and an immense corn crop, yet these, and especially corn, came at a time when there was no large surplus held over from previous years; indeed, in the case of corn, when there was an immense deficit caused by the failure of the crop a year ago. The supplies of fat stock of all kinds are short, and are likely to continue so for years, as the great source from whence these come—the West—was compelled a year ago to sacrifice, in a half fat or store condition, immense numbers of animals which should have been held over for this and next year.

Until the deficit thus caused is made good, which will be a slow process whilst consumption continues so large as during the past year, prices must remain good. When prices are high, the temptation to sell stock which should be held over either for breeders or for better finishing is too great to be resisted, and hence the progress of recuperation of stocks is a slow one. Dairy products have advanced in price since the unfair competition of oleomargarine has been destroyed or largely curtailed, and this advance is likely to hold and make further progress. With such a prospect before them, we see no reason why farmers should not prepare to make large crops during the year now commencing, and especially so with those crops which are to be converted on the farm into meat or dairy products. This is the true line on which farmers should seek to develop their resources, as it will not only result in the securing of a better return for their labors, but will also result in continued improvement of the fertility of the farm. The one difficulty which largely confronts Southern farmers is the labor question. Thousands of colored hands have left the country districts, and found employment in the large cities and towns, and on the railroads, and this exodus of labor is going to continue so long as trade continues good. The only way to meet

it is to turn large areas of arable land into permanent grass and meadows and to make use largely in the working of the arable land and of the meadows, of the labor saving machinery which has been invented and put on the market at such reasonable prices. With this machinery hands can be dispensed with and better work be done and crops be made and saved at less cost than ever in the past. Another means of saving cost must be found in the production of larger crops on the same area of land. This will be found easy when the crops are largely converted into meat and dairy products on the farm, resulting in a larger production of home-made manure, which is the best and cheapest fertilizer which a farmer can use, and which, if supplemented where needed with commercial fertilizer, will easily result in doubling our present crops without adding one acre to the land under cultivation. The cost of making and saving a crop of 40 bushels of wheat, or of 50 bushels of corn to the acre, will be found to be very little more than that of making and saving our present meagre crops of 12 or 15 bushels of wheat and 15 to 25 bushels of corn to the acre. The secret of this increased production to the acre will be found in better preparation of the land before planting, and in the use of farm-yard manure and the leguminous crops to supply humus to the soil. The profitable conversion of these crops into money lies in the use of better bred live stock, which will mature in half the time required by the present scrub stock, and which will make meat and dairy products always commanding the top figure on the market. In this issue we have brought together a large mass of information as to these better bred animals with pictures of typical specimens of the breeds. We bespeak for this matter the careful study of our readers. It means thousands of dollars in the pockets of Southern farmers and a complete change in the appearance of thousands of acres of land.

The work that can be done on the land during the present month is usually small, as it is the one month in the year when, if we are to have any winter we are pretty certain to get it; yet in the majority of years there are days even in this month when plowing can be done and the clearing up of land intended to be cropped can make progress, if only labor can be secured. The New Year's holiday, however, largely prevents any reliance being placed on the hands till towards the close of the month. It is well, therefore, not to attempt much beyond seeing that abundant supplies of feed are kept on hand at the barn

convenient for feeding, so that if any hard weather should set in there will be no fear of the stock suffering. If the weather be mild and the land dry enough, plowing should be done, so as to lessen work later in the spring. Let this work be done thoroughly. Plow deep, and where possible and the subsoil is a good clay one, subsoil as well. In plowing land deep so as to add depth to the soil, do not turn the furrow slice completely over, but leave it on edge, so that the new soil may be mixed with the old soil in working. New soil brought from the bottom of the furrow will not produce large crops until thoroughly aerated and disintegrated by the action of the weather, and this takes time; hence, this deep plowing should not be done late in the spring. The mixing of the old and new soil tends to hasten the fitting of the soil for crop production, and hence the importance of so plowing as to admit of this. The value of subsoiling where the subsoil is a good one, is not half appreciated as it ought to be. It breaks loose the hard-pan nearly always to be found where shallow plowing has been the rule for years, and renders this permeable by the rainfall where the water is stored for the use of the crop in the summer. It makes largely available inert plant food in the shape of phosphoric acid and potash, which is always present in the soil in more or less abundance, and only requires the action of the atmosphere, water and humic acid supplied from decaying vegetable matter to become available for the necessities of the crop. Our own experience has convinced us that in every case except where the subsoil is sandy or leachy, subsoiling may be done with profit.

Whenever the land is dry enough to haul on, get out farm-yard manure and top-dress wheat, oats or grass land, or apply it on the land newly plowed and which is to be put in crop in the spring. The mineral fertilizers, acid phosphate and potash, may be applied along with the manure on the plowed land without fear of loss, and then the whole can be worked in together later in the spring, and thus much time be saved. Farm yard manure is much better on the land than leaching away in the farm-yard and pens.

Clean up land intended to be cropped which has laid untilled for years. Whatever is done in this way let it be done thoroughly. Get out all stumps and haul off all rocks. Left on the land they only serve to harbor weeds, briars, insects and fungoid diseases, and are a constant hindrance to good cultivation. Use the rocks to repair the roads. Let all fences be repaired and make them straight. An old worm fence which is insufficient to turn stock, will often supply rails sufficient to make a new straight fence capable of turning any stock. Set posts the length of the rails

apart and fasten four or five rails to these posts, holding them in place by running a piece of plain fence wire from the bottom to the top of the post on one side. Fasten the wire to the post with staples, making loops to hold the rails in the proper places.

All wet places should be drained and ditches be cleaned out so as to give a quick fall to the water and a good outlet. In putting in drains put them in deep; three feet to three feet six inches is little enough. It is the underlying water which requires to be got rid of. The surface water will soon enough find its way off the land when there is no underlying strata of water to keep it on the surface.

Fill the ice-house at the first opportunity. The first opportunity is often the last in the South. Use plenty of sawdust in packing the ice. It is the surest preservative against waste.

On wet and stormy days clean up, repair and paint all tools and implements. Time spent in this way will be money saved.

RANDOM NOTES.

Pecans—Sorrel—Timothy in South Carolina—
Alfalfa—Lettuce Growing, Etc.

Editor Southern Planter :

Your types in the December number make me say just what I did not intend to say. I meant to say that I agreed with you in not advising the planting of pecans *outside* the cotton belt.

Mr. Knapenberger is right in saying that the presence of acid plants, like sheep sorrel, is not necessarily an indication that the land is sour. The acid in the sorrel does not come from the soil, but is one of the results of the assimilative action of the green leaves, and comes from the air. But there is no doubt that some plants can abide acidity in the soil, while others cannot. The soil that grows sorrel may be acid, and if this is the case, it will not grow clover well, for the microbes that live on the clover roots cannot thrive in an acid soil. Then, frequently the best means for banishing the sorrel is to introduce, through liming, the conditions favorable to the clover, and thus smother out the sorrel. If I had land infested with sorrel, I would test it for acidity with blue litmus paper, and if found to be acid, I would have a short road to banishing the sorrel. Get a heavy growth of clover on the land and the sorrel will have no chance.

I think that your correspondent in Lexington county, S. C., will find that timothy will make but one crop there after seeding, and the summer will kill it out.

He had better use red top and meadow fescue, and get far better results than from timothy in his climate. The fescue will make the main part of the first cutting and the red top will give him a late mowing. I saw a beautiful piece of alfalfa the past summer at Athens, Ga., on a mellow red clay loam, and was told that it was cut five times during a season. At Occoneechee Farm, near Hillsboro, N. C., Colonel Carr has a large field of alfalfa on red clay upland which has been productive now for a number of years. There is no doubt that as the conditions for success are better understood in the South, alfalfa will be largely grown, and with plenty of hay from alfalfa and the cow-pea, we may hope to see stock feeding grow in importance in the cotton country.

I had rather have strychnine and a good shot gun for sheep-killing dogs than any dog law that was ever put on the statute books.

My frame lettuce is rapidly being destroyed by the stem-rot fungus. It is largely due, I believe, to the use of heavy applications of fertilizer in which the nitrogen came from cotton seed meal. Where none of this was put I have no rot. Then, too, I made the mistake of not changing the soil in the frames, but planted the same soil that was used last winter. The result is, that I shall lose fully half the crop, and as I am now getting 75 cents a dozen, this means quite a loss. Old lettuce soil and cotton seed meal fertilizer have been responsible. Hereafter we will get nitrogen for our lettuce fertilizer, either from fish scrap or dried blood. Stable manure seems to have the same effect in promoting fungus that the cotton seed meal has.

That potato yarn Mr. Jeffers reports where four potatoes weighing 8½ lbs. filled a barrel, is rather thin. It takes 150 lbs. of sweet potatoes to make a barrel. We had one that weighed a fraction over 9 lbs., and it would have been a small barrel that four such would have filled. The quince Mr. J. tells about is probably the Chinese quince. It is too tender for the North, but should be grown largely from Maryland, south ward.

W. F. MASSEY,

Editor of Practical Farmer.

FERTILIZERS DO NOT REPLACE TILLAGE.

Editor Southern Planter:

A most common mistake of farmers is to expect too much of fertilizers, due to no little extent no doubt to the extravagant claims made by many fertilizer dealers. Fertilizers are simply a form of concentrated manure, and their use arose largely from the fact that not enough farm yard manure can be made on the average farm to keep the soil in good condition. Careful tillage is just as important with fertilizers as with farm-

yard manure. It is true that fertilizers do not stock up a soil with all kinds of weed seeds, but keeping the soil pulverized and porous and the maintenance of the earth mulch is not the less important on this account.

Farm yard manures are more or less a complete manure; and while it is true that the potash and phosphates contained in same become available as plant-food much less rapidly than the nitrogen, still a large proportion ultimately become serviceable to growing plants. This is the point too generally overlooked by farmers in buying fertilizers. Figured on a fertilizer formula, manure contains equal percentages of potash and nitrogen, and half as much phosphoric acid. Fertilizers need not follow these proportions closely because the nitrogen is needlessly large when we consider the enormous quantities stored in soils by plants of the clover family. So far as the mineral plant food elements are concerned, and by mineral plant food is commonly meant potash and the phosphates, it is very probable that farm yard manure represents closely the actual needs of average crops.

This is the point to establish clearly before we go on the subject of tillage. If the fertilizers are unsuitable for the crop, tillage of itself can do nothing. The correct balancing of the plant-food in fertilizers must be studied with reference to the actual needs of crops in plant food, and the largest crop it is hoped to make. A well balanced fertilizer for 20 bushels of corn per acre, for example, cannot make 40 bushels. Farmers must read and study out these points for themselves. The problem is neither intricate nor difficult, simply a matter of studying the composition of crops, being particular to take the whole crop growth into consideration, for plant-food is as much required to make the roughage as to make the valuable sale portion, and the one cannot be grown without the other.

The function of tillage is to prepare soil conditions favorable to the germination of seed; that is, to keep the soil open and porous, and well pulverized, and even. It also serves to conserve moisture by the well known earth mulch, by keeping an even soil texture, and by keeping down the growth of weeds which use moisture thus robbing the valuable plants. The function of fertilizer is the same as that of manure of all kinds. It simply supplies plant food—nitrogen, potash and phosphoric acid. Plant food can do little without tillage, tillage can do nothing without plant-food. These are things to keep in mind.

As mentioned before, the composition of the fertilizer is important, for plants must have certain proportions of the three elements, and no great excess of any one, or of any two for that matter, can make up for the scarcity of any one of them. On this account, it is of first importance to study the composition of the fertilizers used.

P. J. CHRISTIAN.

ENQUIRER'S COLUMN.

Enquiries should be sent to the office of *The Southern Planter* Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

Utilization of Dead Animals,

Please describe in your answers to queries some easy and practical way by means of which the farmer can utilize the bodies of dead animals as fertilizers, and not turn them over to the dogs and vultures. A large quantity of nitrogenous material is wasted in this way each year on every farm.

Lackawanna Co., Pa. THOS. A. KAY, M. D.

The only means of utilizing the dead carcasses of animals so that they may be effectually converted into fertilizer without becoming offensive or a nuisance, is to put them into a tank and pour sulphuric acid over them. This will dissolve the flesh and bones, and the resultant matter can then be mixed with dry soil and be then applied to the land. There is, however, considerable risk in thus dealing with them, as the handling of the acid is dangerous work unless provided with proper appliances. Some farmers dispose of carcasses by placing them in a pit and covering with quick lime and soil. This process is slower than with the acid, but much safer. Probably the easiest and safest way to dispose of animals which have died from disease, is to burn them. In this way all traces and germs of the disease are destroyed and the resulting ashes can be used as a fertilizer. In any event, dead carcasses should not be left about the farm for dogs and buzzards to consume. The practice of thus disposing of them is the prolific cause of the dissemination of disease amongst animals. We have had positive evidence of hog cholera being thus carried from one farm to another by buzzards. We would like to see a law passed making it compulsory to destroy every buzzard in the country. If we had no buzzards, farmers would bury or burn their dead animals and danger of the spread of disease would be lessened.—ED.

Fall and Winter Plowing.

1. I notice that *The Planter* is an advocate of fall plowing on general principles, but as there is a diversity of opinion as to how far fall plowing should be practiced, I would ask the Editor if, in his opinion, such plowing should be done in all cases.

2. A field on which wheat is grown is covered in the fall with weeds and grass which will make a mulch through the winter in case one doesn't care to put in grain to farm a mulch, would it be best to plow under the trash in the fall or leave it as a mulch, at least till late winter?

3. Another piece of rather heavy land of low fertility, having a tendency to run together and wash, is covered with a light coat of grass and weeds, enough to

prevent washing. Would this land be benefited by fall plowing, in case no grain crop is sown?

As the above described fields are typical of large sections of the South, with slight variations, consideration of the subject will no doubt prove helpful to others as well as myself.

Surry Co., Va.

J. A. MOORE.

1. There is, no doubt, a diversity of opinion as to the wisdom of fall and winter plowing of land in a country where the winter is usually mild, but our own opinion is strongly in favor of the practice for reasons which we have fully explained in numerous articles. Wherever the work can be done early enough to permit of the sowing of a winter-growing crop we would always seed such a crop because of its value as a conservator of fertility and maker of humus, which almost all Southern lands need even more than fertilizer.

2. We would turn down the grass and weeds before they seed in order to lessen the plague of weeds which make so much unnecessary work and rob the soil. If allowed to remain on the surface until winter they will have shed their seed and make work and rob the soil of fertility. Weeds consume plant food and moisture just as surely as profitable crops, and make no return for what they take.

3. The way to cure this land of its tendency to wash and run together, if both conditions can exist simultaneously, which is doubtful, is to plow it deeply and get it filled with humus. Therefore it should be plowed deeply early enough to seed, in a winter growing leguminous crop to be turned down in the spring.—ED.

Service of Sow.

I notice your reply in the December number of the *Planter* to G. W. B., of Middlesex county, with reference to the number of times a sow may drop a litter of pigs within ten months. You said that a sow will usually accept service within a week after dropping pigs. You will please tell us in the January number of the *Planter* how she is brought in heat so soon.

Mecklenburg Co., Va.

A SUBSCRIBER.

The sow (like a mare) will naturally accept service within a week after farrowing. There is no necessity to use any artificial means.—ED.

Canada Peas.

Having read the article in the December issue of the *Planter* about Canada peas sowed for hogs, I have ordered 3 bushels to plant on a trial basis.

How do you prepare them for feed? Do you turn the hogs in on them while in a green state, or cut them like oats and feed them? How many bushels per acre is a good crop of them?

Baltimore, Md.

S. D. JONES.

This crop is usually grown for a hog pasture, in which case the hogs should be turned in as soon as the peas are about half grown in the pods. They will then

consume both the vines and pods. If grown for hay, of which it makes a fine quality, cut when the peas are fully formed but before they commence to ripen and then the vines can be saved with the leaf on them. Always have the crop off the ground before the hot weather sets in or it will likely be lost. The crop may be cut for green feed like Crimson clover or oats, if desired.

It is not a suitable crop to grow for seed in the South, as before the peas ripen the hot weather causes mildew to attack it, and when this starts the whole crop is soon lost.—ED.

Grazing Wheat.

We are asked as to the advisability of grazing wheat. Wherever wheat has made a strong growth early in the winter it is a good practice to graze it with calves and sheep whenever the land is dry during the winter and up to about the 1st of April. It should not, however, be grazed too close. The effect of grazing is to make the plant tiller and spread over the field.—ED.

A Dark Cow Barn.

A lady in Patrick county, Va., writes us that her husband has built a barn in part of which he has a cow stable, but has made no provision for lighting the stable except a small hole into each stall. She says the cows object to go into it, and one can scarcely see how to milk them. She wants to know if this is a proper place for cows.

In reply, we would say that such a place is no more fit to keep cows in than it would be for a human being to live in. Sunlight, daylight and plenty of fresh air are as essential to the health and well-doing of live stock of any kind as they are for mankind. Cattle kept in such a barn as this can never long be healthy. The surest destroyer of all disease germs is sunlight.—ED.

Lightening a Clay Soil.

I have some clay galls I am going to cover with rotten sawdust and plow under, and then apply ground silica, harrow and sow in cow peas, or soy beans.

1. How much silica would you advise to put to the acre?

2. Would you sow before or after plowing?

Cleveland, Tenn

HENRY D. AYRE.

1. As the only effect of the silica will be a mechanical one, you may apply such a quantity as, in your judgment, you think will sufficiently lighten and disintegrate the clay, so as to make it more of a loamy nature.

2. We would apply after plowing and harrow it into the clay soil.—ED.

Lame Horse.

I have a horse that is lame in one of his hind legs. It seems to be hip joint lameness. Can you give me a remedy for it? I have tried several liniments, and nothing I have tried has relieved him. There is no swelling or enlargement anywhere on the leg, but he is lame when he trots. It does not affect his work only in driving.

King and Queen Co., Va.

R. J. VAUGHAN.

If the trouble really be in the hip-joint, it is doubtful whether any treatment will be of service now. To prevent permanent lameness from hip joint injury the remedy should be applied at once after the injury, and even then the result is doubtful. A long period of rest is absolutely essential. A shoe with high heels should be fitted, and hot water fomentations should be frequently applied to the part, and mercurial ointment be well rubbed in.—ED.

Pasture Grasses for Light Land.

I have some rather steep land that is loose and inclined to wash, which I want to set in grass next spring for pasture. What variety of grass do you recommend? How would Johnson grass do? Is it a good pasture and hay grass? I want something that will make a good sod and prevent the land from washing.

Bristol, Tenn.

SUBSCRIBER.

Plow the land deeply, and thus make it possible for the water to get down into the subsoil instead of washing off the surface soil. Work fine, and then seed in March or April or in August or September a mixture of the following grasses: Orchard grass, perennial rye, Virginia blue, meadow fescue and Hungarian brome. Sow at the rate of three bushels to the acre. Johnson grass is not adapted to such land as this. It should be sown on level loamy land, where it can remain permanently and will not encroach on other arable land. It makes good hay when cut before maturity, and also good grazing. It is closely related to the sorghums, and grows much like them, but makes long jointed underground stems like wire grass.—ED.

The two most potent factors in a country's progress are roads and schools. And they are inseparable, where one is really good the other will not long remain bad, and where one is neglected the other is not found much in advance.—*Southern School and Home*

If I had some magic gift to bestow, it would be to make our country youth see one truth, namely, that science as applied to the farm, the garden and the forest has as splendid a dignity as astronomy; that it may work just as many marvels and claim as high an order of talent.—*John Graham Brooks.*

Trucking, Garden and Orchard.

WORK FOR THE MONTH.

Not much work of any kind can be done in the garden or orchard during this month, except completing the clearing up and breaking of land which has been in late fall crops. Let this work be done effectually. Leave no trash, weeds, or wasted vegetables or stalks on the ground, but burn them up and thus remove all winter hiding places for insects, and destroy their eggs and the fungus spores, which are so prolific of damage in summer. Break the land deeply and leave it rough, so that the frost and weather can penetrate it. Farm-yard manure can with advantage be hauled out on to the land after it has been plowed, and phosphate and potash fertilizers may be spread on at the same time without fear of loss from leaching. A good dressing of freshly slacked lime—say, 50 bushels to the acre—will on land which has been long used for growing vegetables be found of more help to it than manure, but lime and farm-yard manure should never be applied at the same time. Apply the lime now and manure may be applied in March or April.

The composting and mixing of farm yard manure, leaves, sods and other vegetable matter, should receive attention. This will be required in February and March for the hot-beds and frames and later for the crops in the open ground. Turn over and mix well two or three times during the winter, so that it may be sweetened and uniform in quality.

In Tidewater Virginia and Eastern North and South Carolina, English peas may be sown for the early crop if the ground is dry and in nice working condition. A field that grew Irish or sweet potatoes last year makes the most desirable land for the pea crop, as peas do not want fresh manure or too rich soil. If any fertilizer is needed it will probably only be phosphoric acid. This may be given by using 300 or 400 lbs to the acre of acid phosphate. If any potash is needed apply 50 to 75 lbs. to the acre of muriate of potash. English peas should be put in deeply—say, with a cover of 4 or five inches of soil. Sow in drills two feet apart, putting the peas in the bottom of the drills in a wide row—say, 3 or 4 inches wide, and scattered pretty thickly. Tread into the soil and cover.

Towards the end of the month small sowings of radishes and lettuce may be made in the above sections, in sheltered situations or where protection can be given by mats or sash.

The pruning of orchards and vineyards should be continued in mild, dry weather.

GARDEN AND ORCHARD NOTES.

January is usually regarded as a "rest month" by the farmer. He feeds stock, builds fires, and eats of the things he spent last summer and fall, growing and storing away. It is a time when the Virginia farmer usually "turns over the new leaf," tries to balance accounts, and matures plans for next year's work.

These occupations, however, really make it one of the most important months of the year to the farmer, since he draws conclusions from the past year's experience, and decides upon plans to be followed during all the next twelve months. If these plans are not good, the year's work will be largely a failure, hence the very great importance of well matured plans.

What variety of apples should be added to the orchard; when and how should they be planted; when and how should the pruning be done. (We prefer to do most of this work in February and March, and expect to give full instructions along these lines in the February and March issues of the *Planter*.) Where should the potatoes be planted, Irish and Sweet? Are the prospects favorable for growing an early crop for the near by markets? Should a late crop of cabbage be grown for shipment to the Gulf States during the later part of summer and early fall? Do the garden fence and gates need attention?

You may prune the grape vines between now and the middle of March. How should they be pruned? What fertilizers should be used on the crops next year? How can a good home-made fertilizer be made? These are some of the many things the farmer should consider during this, the first month of 1903.

Put a winter mulch on the strawberry plants at once if not already done. Is there a real farmer in the Southern States who has no strawberry plants in his garden? If so, he is missing something in this life. His more fortunate neighbor should invite him over to see the large, luscious, crimson colored berries peeping through the rich green foliage of the plants early in June. Let him gather some berries and sample them with a liberal sprinkling of sugar and cream, and then watch his enthusiasm rise to 105 degrees. This kind of horticultural teaching will bear fruit both for the pupil and for the teacher.

But I am wandering from what I started to say. How should the mulch be applied? Take straw, pine needles or any similar material, that has no weed seed in it, and cover all the strawberry ground with it

after the ground has frozen an inch or more. Hold the plants in the frozen bed till you want them to grow in the spring. Judging from my own experience along this line, I agree with Mr. Blacknall, who stated in the December issue of the *Planter* that it was doubtful about winter mulching being beneficial to strawberry plants in the Gulf States. Later on, I will tell how I obtained good results by summer mulching in the dry climate at the Texas Experiment Station. It is more important in the Gulf States to know how to carry the plants through the summer in a strong, healthy condition than it is to know how to take them through the winter. But I believe, from my own experience, that winter mulching is advisable in all that section of Virginia west of Piedmont. I have seen excellent crops of strawberries grown at the Virginia Experiment Station by winter mulching (in fact, I helped to grow them), while the near by crops that were not mulched were almost failures. In fact, I believe, by careful winter mulching, other conditions being favorable, that a good strawberry crop can be grown over a large portion of Virginia and Tennessee with more certainty than a wheat crop. As to profits, there is no comparison.

Besides the strawberry, which is the first fruit to ripen, the farm should not fail to have some good Black Cap Raspberries growing to follow the strawberry closely. Put this fruit down on your list for planting in March. What varieties should be planted. There are a number of good black cap varieties sold by nurserymen, but the farmer can frequently get good raspberry plants along Old Virginia worm fences that will cost nothing but a little time to go after them. Many people like to get something for nothing. Here is a chance. The berries are not usually as large as the cultivated varieties, but the flavor is frequently better. Better have these than none. Let the boy take his first lesson in horticulture by setting them out and taking care of them. Let him see how they propagate by branching in the fall and taking root at several places at the tips. Each one of these tips may be taken up the following spring and be used to start a new plant. The plants should have been marked while in fruit for transplanting, but had better be done now than not at all.

Then there are currants, gooseberries, pears, peaches and quinces to follow later on.

What kind of literature are you reading these winter evenings?

Do you read the bulletins issued by the United States Department of Agriculture? If not, why?

Are you deriving any benefit from the State Department of Agriculture? Have you read the bulletins

issued by the Commissioner of Agriculture, Richmond, Va. If not, why not?

Are you deriving any benefit from the Virginia Agricultural Experiment Station, Blacksburg, Va.? If not, why not? Is your name on the mailing list for the various bulletins issued to farmers free. If not, write a postal card row to any of the three departments mentioned above and ask to have your name and address placed on the regular mailing list for free bulletins. As my farm is only ten miles from the Virginia Experiment Station, I may have more to say about this institution in a future issue.

Have you left any of the tools out in the damp winter weather. If so, they will help to bring on a good crop of farm mortgages. I believe, as a rule, more tools rust out and rot out in Virginia and other Southern farms than are worn out. I know this is a strong statement, but according to my own experience as a Virginia farmer and my observation in extensive travel over the Southern States, this conclusion has forced itself upon my mind.

Take those tools in out of the wet. Repair them. Give the wood work a coat of paint and the iron and steel parts that go into the ground, on such tools as shovels, hoes, plows and cultivators, a good coat of linseed oil. This will help to keep rust away and thus enable the tools to shed the dirt better in the spring. Clean tools will save the temper of the man.

Clean up the gardens. When harvesting some cabbage and turnips from my garden in November, I noticed many lice on the roots of the turnips and on the heads of some cabbage. I will not leave a single plant for these pests to winter on. An attempt will be made to starve them out in the dead of winter. All the weed seed that I can get together will be burned. The idea being that it is easier to burn a weed seed or an insect egg in the winter than it is to pull a weed up during a hot summer day or feed the progeny of an insect. Of course, an attempt was made to prevent these parasites multiplying during the summer, but the warfare must be kept up by the farmer.

R. H. PRICE.

This Department will have contributions each month from Prof. R. H. Price, of Montgomery county, Va., who has had much experience as a practical farmer and horticulturist in this State, as well as having had charge of the Horticultural Department of the Texas Agricultural Experiment Station during the past ten years.

When corresponding with advertisers mention the *Southern Planter*.

VIRGINIA STATE HORTICULTURAL SOCIETY.

Report of Annual Meeting.

The Annual Meeting of the Virginia State Horticultural Society was held in the Masonic Hall, Lynchburg, on December 2nd and 3rd, with a large attendance. A most interesting programme was presented, and discussed in a spirited manner. Local members brought specimens of apples, pears, peaches and some very fine vegetables. The Society had purchased a box of the highest grade Pacific Coast apples to be had in New York market as a comparison with our own, and also to show the Pacific Coast methods of packing and grading. These apples were of the Spitzenberg variety and sold in New York for \$3.75 per bushel box. They did not compare with the Virginia fruit on the tables in either appearance or flavor. Mr. Collingwood, editor of the *Rural New Yorker*, who was present as one of the speakers, said publicly that this was his first visit to Virginia, and that he had for years been attending meetings of various Societies in the Northern States, but that with the single exception of one exhibit in Maine he had never seen such fine apples; they were perfect; and he expressed surprise that the people of Virginia did not let those outside the State know what fine fruit they had. He said it was our duty to advertise ourselves.

The Society passed a resolution urging the passage of a bill for an appropriation for St. Louis Exposition by the Legislature, and binding members of the Society to do all in their power to get petitions signed and forwarded from their respective counties to members of the Legislature.

President S. B. Woods urged the necessity of good roads, and the proposal to form an Appalachian Forest Reserve by the Federal Government in Virginia, North Carolina and South Carolina, which were endorsed by the Society.

Mr. H. P. Gould, of the United States Department of Agriculture, read an interesting paper on "Why Some Orchards Fail," and referred to the progress in development of the fruit industry, from the first orchards which were planted merely for cider. He impressed the necessity of cultivation, spraying and intelligent pruning. The subject of shipment of peaches and pears to Europe was taken up by Prof. W. A. Taylor, of the United States Department of Agriculture, whose remarks were interesting and illustrated by statistical charts.

Dr. M. L. McCue, a prominent and successful orchardist in Albemarle county, read an able paper on "Care of Orchards;" describing methods from planting to bearing stage. Prof. Alwood and Senator Lupton, of Winchester, gave an illustrative lecture on

packing and grading fruits; samples were shown of how apples should be graded, and various kinds of packages were exhibited.

Mr. A. T. Todd, of Crozet, took up the subject of packing peaches in a similar manner.

Mr. O'Rork, of Staunton, talked about the by-products, evaporating, &c., showing the best means of utilizing what has usually been wasted.

Prof. Alwood talked on canning, showing samples of product.

Mr. Collingwood, editor of the *Rural New Yorker*, spoke on Handling Fruit for New York markets. He is a most pleasing speaker, and during his long and interesting talk held the close attention of his audience. His method of illustrating the points he desires to impress by humorous anecdotes was greeted with hearty laughter. His description of life in New York flats, with 1,600 people to the acre and twice that number in the tenement districts, gave an insight into an existence altogether unusual to his hearers. He showed how, under these conditions, the tendency was to smaller packages of fruit, and advocated the use of bushel and half bushel boxes instead of barrels for apples. He instanced the profitable business accomplished by California under these conditions. He said if they could buy our Winesap instead of the Ben Davis they now got they would appreciate red apples instead of shunning them as at present.

A lengthy discussion followed Prof. Alwood's résumé of San José scale work. Some members contended that the law had not been properly administered by the State Inspector, and the general feeling was that in its present condition it was not far-reaching enough, and also unworkable.

A committee was appointed to present the views of the Society to the members of the Legislature and urge amendments in the law to make it meet the exigencies of the case, it being pointed out that if scale were discovered on our fruit in the larger markets, especially New York, they would immediately quarantine against all Virginia fruit.

Mr. W. Whately, of Crozet, secretary and treasurer, in his report, showed that the Society was making steady increase in membership each year, and showed a satisfactory balance in hand in his financial statement.

The election of officers for 1903 resulted in Mr. W. W. Otey, of Pulaski county, taking the place of Mr. W. A. Francis, of Salem in the list of vice-presidents, the other officers being continued in office. Mr. Whately desired to resign the office of Secretary-Treasurer, but was unanimously voted in, and bowed to the will of the members.

Interest in the meeting held to the last, the final session lasting up to 11 P. M., Mr. Collingwood giv-

ing a second talk, which was as popular as the one earlier in the day.

Prof. Van Deman, who is always a favorite with Virginia horticulturists, was in attendance, and was several times a speaker, his remarks receiving the usual attention accorded to them.

The Society was requested to meet at Charlottesville, Lynchburg, and Pulaski next year, the claims of each being warmly advocated, and after a spirited friendly contest, the members from the Southwest gained the victory they deserved, and Pulaski was decided on as the place of next meeting.

The report of proceedings that will shortly be issued will be of even greater interest than its predecessors, which is saying a great deal. All members obtain copies free, and no horticulturist can afford to be without it. Annual membership being only \$1.00 for each year, any one may be placed on the list by remitting this amount to Mr. Whately, Secretary-Treasurer, Crozet, Va.

PECANS IN VIRGINIA.

Editor Southern Planter :

Believing your statement in the November issue, that the pecan is unsuitable for planting anywhere in Virginia, is a mistake, which you would gladly correct, when convinced that you are in error ; as well for the benefit of any of your subscribers who have planted the pecan, or may be contemplating doing so, I enclose under another cover a copy of the *Daily Advance*, published here (Lynchburg), which contains facts in a leading editorial that somewhat combat your views as to the pecan. I will add that I lived at a place here on which was flourishing a pecan tree, that I believe is the largest tree of any kind in the city to day; and it has large crops of nuts each year. My boys sold most of them to Mr. Samuel A. Boyd, who was then, and had been for many years, the leading confectioner here, and he told me on several occasions that he preferred them to any he could buy on any other market because of their superior flavor and their shells, which were generally filled with sound kernels.

Lynchburg, Va.

J. D. PENDLETON.

In the article referred to, the editor of the *Lynchburg Advance* says :

Our Georgia exchanges are having much to say about nut culture in that State, especially pecans. Experiments have proved that the pecan tree flourishes admirably in Georgia and produces profitable crops. Groves have been planted in various localities, and some of them have already come into bearing, bringing handsome returns to the owners. It has been sug-

gested that the tree would flourish in Virginia, but the *Southern Planter* discourages the attempt to grow them in the State, believing that the climate and soil are not suited to them. In the December number of the *Planter*, two correspondents take issue with that journal and tell of flourishing pecan trees in the counties of Prince William and Norfolk. In Norfolk county, there are two immense trees seven feet in diameter near the ground, which make admirable shade and produce nuts worth from \$75 to \$100 annually. The *Planter* replies that climatic conditions in Eastern Virginia may suit this tree, but they will not thrive in Piedmont Virginia. Now, we can tell the *Planter* of several flourishing pecan trees in Lynchburg, one of them, two and a half feet in diameter, has been bearing abundant crops for years. The other two are younger, and not so large. There is another big tree in the country, not far from the city, which has been bearing good nuts for years—so the tree will grow in Piedmont Virginia. But we agree with the *Planter* that it is not its proper habitat, and it would not be well to go into the business of raising pecans here.

NUT-GROWING IN VIRGINIA,

Editor Southern Planter :

I was much interested in reading the experience of your correspondents who have attempted the raising of nuts.

If of interest, my experience is as follows :

Some twelve years since, I purchased from a New Jersey nurseryman ten trees of each of the following varieties : Japan Chestnut, Pecan and English Walnut. Three of the Pecans are alive to day—one 20 feet, one 15, one 8 feet high—but none have ever set fruit, although they are strong hardy trees.

Of the English walnuts, five are living, one of which is ten feet high ; the others have made but little growth, although all are apparently thrifty, but no fruit has set on any of them.

Of the Japan chestnuts, six are living, several of which have made a satisfactory growth, and two of them have been bearing for several years. One of these produced a gallon of nuts last season.

As for filberts, I imported with other trees some 30 years ago two trees from England. They send up shoots from the root, but have never matured a fruit-

All of these trees were planted in fine rich soil, and, after a year or two, the blue grass was allowed to grow about the trees, as they were planted in the house grounds. My farm is four miles north of James river at Scottsville.

Albemarle Co., Va.

W. G. M.

Mention the *Planter* when corresponding with advertisers.

Live Stock and Dairy.

THE DAIRY BREEDS OF CATTLE.

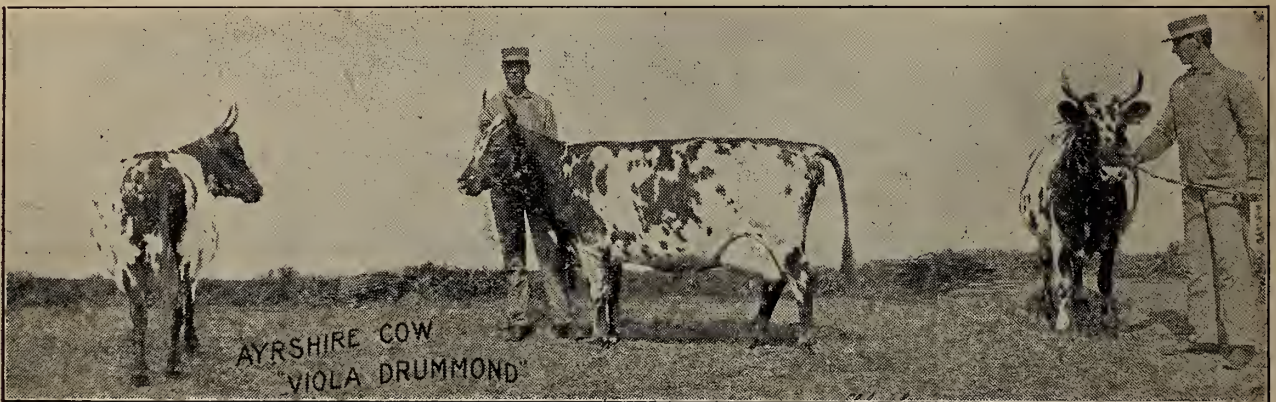
Editor Southern Planter :

In naming the dairy breeds of cattle, as distinct from beef breeds and dual or general purpose cattle, those races only should be considered which have well established reputations for the profitable production of milk. Other desirable qualities may be ignored. As thus defined and known in America, the dairy breeds are the Ayrshires, Guernseys, Holsteins, and Jerseys. If other parts of the world were searched, a few additional breeds might be found having claim to recognition in this list. Representatives of some of these are occasionally seen in this country, but none have made any serious impress upon our dairy industry, and they are not likely to do so. Our reputation is limited, and however meritorious they may be locally, there is not sufficient cause for describing them in this connection.

The four breeds named all produce thrifty calves

tained fixed characteristics of great dairy excellence. They are medium sized cattle, muscular and active, the best of foragers, and accustomed, in their native country, to subsisting on pasturage in summer and almost exclusively upon hay and straw in the winter. Ayrshire cows may be fairly said to excel the other dairy races in earning their living under difficulties and giving a profit upon the roughest forage. They are naturally hardy and admirably adapted to grazing over wide ranges of broken and rugged pastures. While they respond to good care and pay well for it, they are comparatively indifferent to exposure and inclement weather. Bred to abundant air and exercise, they soon show the ill effects of too close housing and crowding in ill ventilated stables. No breed is hardier if rationally treated, and none succumbs sooner to unsanitary conditions.

The general form of the Ayrshire is the wedge-shape—regarded as typical of cows of dairy excel-



when properly treated, and, although some of them are small, they make good veal. Steers from them can be raised at a profit, but not as economically as from other breeds. Young bulls and young females, non breeders or dairy failures (the "black sheep" which occasionally appear in every flock), can be readily turned into excellent beef. But aged animals, which have served their purpose as breeders and dairy producers, cannot be profitably fattened. None of these side issues should be depended upon for income. If entitled to be called dairy cattle, the cows should be capable of such profit during their years of dairy production as to render other considerations insignificant, except the rearing of enough selected calves to maintain the composition of the herd.

AYRSHIRES.

The Ayrshire breed has been developed within a century in the southwestern part of Scotland and at-

lence—and they are short legged and fine boned. The face is usually rather long and straight, but clean and fine, with a full growth of horn which curves outward, then inward, and turns well up, with tips inclined backward. This gives an upright and bold appearance to the whole head. A black muzzle is the rule, although white seems to be no challenge of purity of blood. The eye is peculiarly bright, with a quick movement indicating extreme watchfulness. The whole appearance is of a highly nervous temperament. The prevailing color of the body is red and white, variously proportioned and in spots, not mixed. Probably three fourths of all this race of cattle can be thus described in color. A generation ago the dark markings predominated, but there has lately been a strong trend towards more white, especially in Canada. The red is sometimes bright, but often of a rich, sherry brown, like the shell of a horse chestnut.

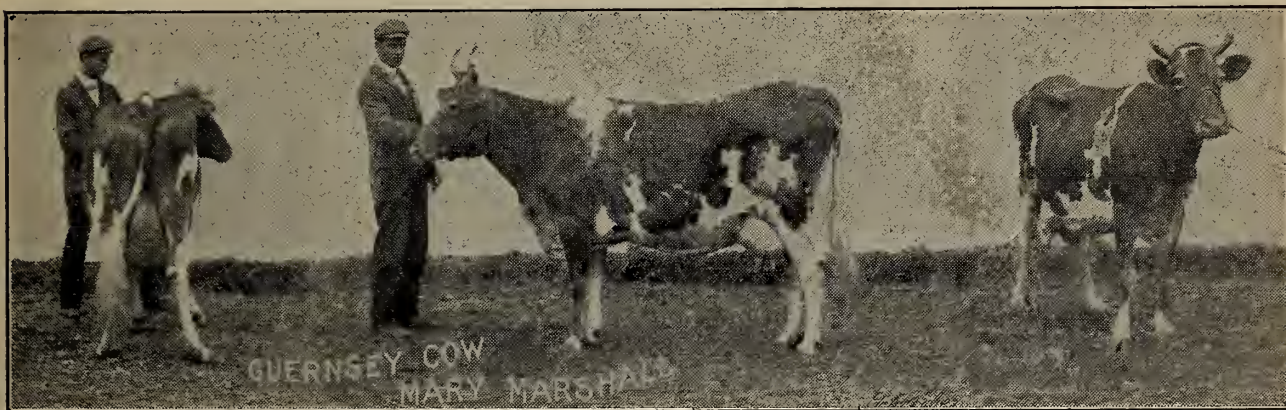
Sometimes the color is a dull brown, and occasionally a brindle appears. Nearly all the good animals of the breed have broad, flat, well-arched ribs, giving room for capacious digestive apparatus. The udder extends both forward and back, is held well up, has a broad attachment to the body and a level bottom line. It is a snug, compact organ, admirably fitted by its shape and elasticity for the elaboration and storage of milk, and when the glands are at rest, it occupies but little space. The teats are small and cylindrical rather than cone shaped. In many cases the teats are too small for comfortable milking, but careful breeders have remedied this defect, and whole herds can be found with superb udders and teats of good size.

The Ayrshire cow is a large and persistent milker, although she usually demands a dry season of six to eight weeks before calving. A yield of 5 500 lbs. a year as the average for a working herd is often realized. Records of eighteen well managed herds, collected from different sections and averaging twelve

special reputation which this breed has enjoyed as superior cheese makers is not sustained by the facts. In the hands of capable makers, Ayrshire milk will make little if any more cheese from a given weight than will the milk of other breeds. Yet, the uniform distribution of fat is an advantage, and there is less liability to lose fat in converting this milk into cheese than in the case of richer milk with fat globules larger and more irregular in size.

GUERNSEYS.

Guernseys originated upon and are imported from the second in size of the Channel Islands, lying between England and France. The early importations to this country were not well distinguished from the Jersey, and all these island cattle were indiscriminately and incorrectly called "Alderneys." About thirty years ago the Guernseys became recognized in America as a distinct breed. Since that time there have been importations nearly every year, and the breed has steadily increased in numbers in this coun-



cows each, show an annual average product of 5,412 lbs. One noted herd, averaging fourteen cows in milk, has an unbroken record for twenty years with an average yield of 6,427 lbs. a year to the cow. One year the average was 7,000 lbs. Single cows have produced 10,000 and even 12,000 lbs. of milk. Butter records are not numerous, but the milk of the herd referred to averages over 4 per cent. of fat, and the cows from 244 to 512 lbs. of butter each, with an average of 353 lbs. There are single authentic records of over 600 lbs. of butter in a year. The milk of this breed is not exceptionally rich, but rather above the average of cows, or $3\frac{1}{2}$ to 4 per cent. fat for mixed herd milk throughout the year. The fat globules are small and very even in size, so that cream rises slowly; it has comparatively little color. The Ayrshire is therefore not a first class butter cow, but its product is admirably suited for market milk, safely above legal standards, uniform and capable of long transportation and rough handling without injury. A

try and as steadily gained in favor wherever introduced. There are now just as many Guernseys as Ayrshires on this continent, rough estimates placing the number of each at 25,000.

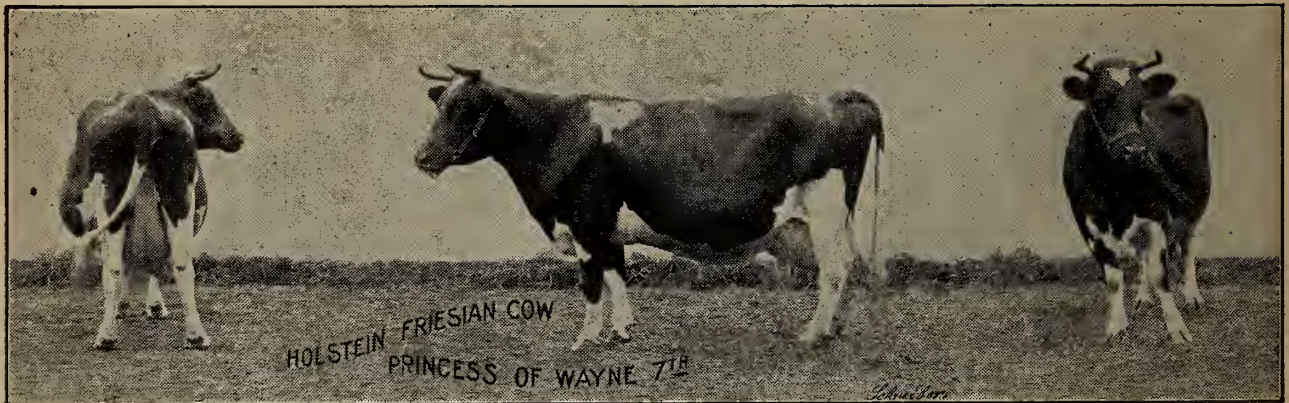
The Guernseys are a size larger than the Jerseys, with which race they can best be compared, and are stronger boned and coarser in appearance. But the cows are generally handsome and attractive to the dairyman. They are claimed to be hardier and larger milkers, but both these points are stoutly denied. The one hundred best Jerseys in the United States are undoubtedly the equals as dairy animals, in every respect, of the hundred best Guernseys. But the latter have been selected for importation with better judgment, and it is probably true that the average Guernsey cow in this country to day is a better producer than the average Jersey. In other words, there are many more poor Jerseys than poor Guernseys.

The head of the Guernsey is rather long, the neck slender, the body large, deep and rangy, the rump

prominent, the flanks thin, thighs incurved and twist open and roomy. Altogether, the animal is at once recognized as businesslike and belonging to the pronounced dairy type. The breed is almost always light in color, yellow and orange predominating, with considerable white, usually in large patches. Darker shades, approaching brown, are found upon some cows and often upon bulls. The muzzles are almost invariably buff or flesh colored, surrounded by a fillet of almost white hair. Occasionally a black nose is found, showing the influence of some distant ancestor from Brittany, or suggestive of more recent exchange of compliments between the Jersey and Guernsey isles which have undoubtedly although rarely occurred. The horns are small, curved, fine, thin shelled and waxy in appearance; they often show a deep, rich yellow for a third of their length from the base. A characteristic of the breed is a very generous secretion of yellow coloring matter which pertains to the whole skin, but is seen especially where the hair is white, in

stated, in natural color. They may be especially recommended as butter cows, as well as for market milk where quality secures a relatively high price. They demand good treatment and liberal feeding, but are noted for rich production and economy of food. From 5,000 to 6,000 lbs. of milk per year should be expected and upwards of 300 lbs. of butter. One herd of over one hundred cows of all ages in this country gave 5,317 lbs. of milk and 318 lbs. of butter. Single cows have ranged up to 10,000 and 12,000 lbs. of milk a year and a few still more, producing 500 to 750 and even 900 lbs. of butter. The mixed milk of this breed is often found to average 14 to 15 per cent. of total solids and 5 to 6½ per cent. of fat. The globules are large and the cream separates easily.

Guernsey bulls have proved extremely satisfactory in grading up a herd with fairly selected dairy cows of no particular breeding; the offspring usually make very acceptable dairy stock. Guernseys have not yet been largely introduced in the South, and will deserve



the ears, around the eyes and about the udder. The bright golden undertone of the white parts of the body, when in strong light, is often very noticeable. This gives a distinctive "richness" to the animal, and causes the milk and butter produced to be of a higher color at all seasons of the year than that of any other breed. A single Guernsey cow will give color and attractive tone to the milk and butter of a dozen cows of kinds deficient in this respect. The udder and teats are large and well shaped and placed in selected specimens, but these and other dairy markings do not appear to be as uniformly fixed throughout the breed, as in the case of Jerseys, which have been subjected to a larger course of careful breed development. The cows possess a highly nervous temperament, and yet are extremely quiet and gentle when properly handled. Much less trouble is reported in the management of aged bulls than with Jerseys of like age.

The cows of the breed produce liberal quantities of milk, of uncommon richness in butter fat, and, as

more attention in this section.

HOLSTEINS.

Holsteins is the popular name for the strongly-marked black-and-white cattle of North Holland and Friesland, although the herd-book title is Holstein-Friesians. They constitute one of the very oldest and most notable breeds of cattle. Holland has been famous for dairy products for at least a thousand years, and the great bicolored beasts upon which this reputation has been gained have been slowly but surely developing their present form of dairy excellence.

The large frame, strong bone, abundance of flesh (particularly in the males and all young), silken coat, extreme docility and enormous milk yield of these cattle, result from the rich and luxurious herbage of the very fertile and moist lands upon which the breed has been perfected, the close housing and uncommonly good care given them for half the year, and the intimate association of people and cattle. The striking

features in the appearance of this breed, are the color markings and the great size of both sexes. The shining jet black contrasts vividly with the pure white—the fine silky hair being upon a soft and mellow skin of medium thickness. In some animals the black predominates and the white in others. Black has been rather preferred among American breeders, yet a few noted animals have been mainly white. The average animal carries more black than white, and the markings are extremely irregular. The black and white are never mixed, the lines of demarcation being usually sharply drawn. The Holsteins are much the largest of all the dairy breeds. The big, bony frames are well filled, and the chest, abdomen and pelvic region fully developed. Cows range in weight from 1,000 to 1,500 lbs., with an average of 1,200 or more. Bulls at maturity often exceed 2,500 lbs. in weight.

The head is long, rather narrow and bony, with bright yet quiet eyes and large nostrils and mouth. The horns are small and fine, often incurving and fre-

above their own live weight in milk monthly for ten or twelve consecutive months. There are authentic instances of daily yields of 100 lbs. or more for several days, and 20,000 to 30,000 lbs. of milk in a year. Cows giving 40 to 60 lbs. per day are regarded as average animals, and 8,000 lbs. or more per year is depended upon as a herd average. One herd record for four years, gives twelve cows an average of 8,805 lbs. a year. The milk of the large producers is often thin, low in percentage of total solids, and deficient in fat. The cows have been favorites for the milk supply business, but it is frequently found expedient to mix in more or less milk of Guernsey or Jersey blood, to add color and meet standard requirements. There are families of Holsteins, however, and single animals are numerous, which give milk of average richness and are large butter producers. Cows have frequently made 15 to 25 lbs. of butter a week, and 30 lbs. in a few cases, with even 1,000 lbs. or more in a year. The milk of the breed is characterized by fat globules of



quently white with black tips. The ears are large, thin and quick in movement. The neck is long, slender and the upper line often concave, in the cows. The back line is usually level, particularly with the males, and the hips broad and prominent; some have well-rounded buttocks, but a drooping rump is not uncommon. The legs appear small for the weight carried, and are quite long; the tail is long and fine and a white brush is required. The udder is often of extraordinary size, extending high behind but not always well forward, with teats well placed and very large, sometimes uncomfortably so. The milk veins are prominent and in some cases remarkably developed. In temperament, these animals are quiet and docile, the bulls in particular. They have great constitutional vigor, in their capacity as feeders and in their large size at birth and very strong and thrifty growth of the calves.

Holstein cows yield milk in conformity to their size; they are famous for enormous production. Records are numerous of cows giving an average

small and uniform size, separating slowly by the gravity method of creaming and having a very pale color.

Holsteins have done well in the South where, instead of depending upon pasture and with much exposure to the sun, they have been kept stabled and generously fed. A cow bred and raised in Texas, when five years old and 1,350 lbs. in weight, made a record of 707 lbs. of milk in seven days, which produced 22 lbs. of butter, and in one month, 2,958 lbs. of milk containing fat equivalent to 86 lbs. of 80 per cent. butter.

JERSEYS.

Jerseys were built up into a distinct breed, from a foundation of French cattle, by a long course of skillful breeding, upon the largest and most southern of the islands of the English Channel. Early in the eighteenth century steps were taken to prevent outside cattle coming to Jersey, and in 1779 a law was made, which is claimed to have been rigidly enforced ever since, prohibiting under heavy penalties the land-

ing upon the island of any live animals of the bovine race. Jerseys have, therefore, been purely bred for a longer time than any other breed of British origin. They were brought to the United States first from fifty-five to seventy years ago as "Alderney cattle," and this name is still somewhat used. But it is wholly wrong; Alderney is an insignificant little island with no breed of cattle of its own. There is really no such thing as an Alderney cow.

Jerseys are the smallest in average size of the four dairy breeds. The cows range from 700 to 1,050 lbs. weight and the bulls from 1,200 to 1,600, and some times 1,800 lbs. Yet there are herds which, by careful management, have been brought to an average of over 1,000 lbs. for mature cows. In color, this breed varies more than any other. For a time there was a craze for "solid-colored" animals in this country, and some persons have the idea that no pure Jersey has white upon it. This is a great mistake; all of the earliest imported were broken in color, and there have always been such among the noted cows. Pure Jerseys are of all shades of brown to deep black and of various shades of yellow, fawn and tan colors to a creamy white; also mouse color or squirrel gray, some light red and a few brindle. With all these colors and shades, there may be more or less white, in large patches or small and on any part of the animal. Bulls are darker in color than cows of the same families. There are always signs or markings about a pure Jersey, or a high grade, irrespective of its color and hard to describe, by which the blood is plainly shown.

The head of the Jersey is small, short, broad, lean, and the face generally dished. The muzzle, including under lip, is black or a dark lead color, surrounded by a mealy fillet of light skin and hair. Occasionally a buff nose is found, but objected to as showing a probable infusion of Guernsey blood, although perhaps very distant. The eyes are wide apart, bright and prominent; the horns small, waxy, with thin skulls, often tipped with black and much crumpled. Ears small and delicate; neck clean; legs fine and short; body well rounded with capacity for food and breeding; tail long and fine with a full brush often reaching the ground, and black, white or mixed. The skin is mellow or loose, with fine, silky hair. The udder is of good size, more pendulous than in the Ayrshire and with quarters more distinctly defined. Teats sometimes small and conically inclined. The square, close, "Ayrshire udder" is also found, well-nigh perfect. Milk veins are frequently highly developed, tortuous and knotty. This breed is second only to the Guernsey in the abundant secretion of coloring matter, which shows itself on the skin on different parts of the body, makes the fat of the carcass a deep orange, gives a rich tint to milk and cream and

a golden hue to the butter. But this attribute is by no means as pronounced or as general in the breed as with Guernseys, and in some Jersey families it is deficient. Jerseys are irregular and sharp in outline, being picturesque rather than symmetrical, with the spare habit of flesh which is deemed favorable to dairy quality and enough muscular development for healthy activity and full digestive force. They are light, quick and graceful in movement.

For generations Jerseys have been bred almost exclusively for butter. In America, breeders have succeeded in increasing the milk yield while maintaining its high quality. Three and four gallons a day are common yields—not infrequently five; and these cows are noted for persistence and great evenness of product through a long season. Dairy records are numerous. Ten herds selected as having average dairy farm conditions, include 140 cows and cover six years; the annual milk product per cow was 5,157 lbs., yielding 293 lbs. of butter. One of three herds had twenty five cows of all sizes with a continuous record of seven years; the annual average was 5,668 lbs. of milk and 342 lbs. of butter per cow. Several herds for shorter periods show averages of 6,000 and 7,000 lbs. Single cows are on record as producing 10,000, 12,000 and several over 15,000 lbs. of milk in a year. The characteristic of the milk of this breed is a high percentage of total solids, with 4 to 5 per cent. of fat as usual, and higher in many instances. The butter globules vary in size, but a great proportion are large and the cream separates readily. Butter records are correspondingly large; good herds yield 350 to 400 lbs. for every milking animal. Individual cases are authenticated by the hundreds of cows making 15 to 20 lbs. of butter a week, with numerous records of 25 to 30 lbs. Several yearly tests have resulted in 800 to over 1,000 lbs. of butter from one cow in twelve months.

Jersey cattle are of the nervous order of temperament, highly developed. They are excitable for cause, but the females are very placid and docile when properly treated. The bulls have the reputation of being fractious and difficult to handle after attaining maturity; this is largely a matter of early training and judicious management. The cows of this breed are heavy feeders with great capacity for assimilation. They have strong constitutions, and will bear forced feeding for long periods uncommonly well. In the good animals all the extra food is converted into milk. The Jersey cow is essentially a machine for producing milk and butter, responds readily to varied treatment, and is remarkably adaptable to widely different conditions. The breed has been generally distributed in the South, and has done well in every State. Yet, there are far too many kept solely because of purity and pedigree, and without profit; the

dairy performance of such animals does not justify their existence or reproduction.

GRADE COWS.

Grade cows of all four of these breeds are eminently satisfactory as dairy animals. Any herd of mixed blood, with fair dairy qualities, can be rapidly built up and improved by the use of a well selected, pure bred bull from any one of the four. They all seem to cross advantageously upon what is called "native stock" and upon females having a perceptible grade, or more, of Shorthorn or Durham blood. Guernsey and Jersey grades are especially satisfactory as dairy cows. But the pure animals of these strongly-bred races do not generally cross well among themselves. The Holsteins are very prepotent, and stamp their characteristics upon all their grades and crosses, yet they seldom "nick" well with pure animals of the other three breeds. The Guernseys and Jerseys mix well, but without improvement upon the parents of either side. The Ayrshire sire does not cross well with any of the others. A very superior dairy animal is, however, the usual result of crossing a good Jersey sire with an Ayrshire dam.

It is gratifying to note that while the creation or development of these four breeds of dairy cattle must be credited to foreign countries, every one of them has been improved under the conditions and management which they have received in the United States. With the possible exception of the Ayrshire, all have been subjected and made adaptable to far greater variations of climate, food and general environment than in their native countries, and have here made records of dairy performances exceeding anything known among their progenitors or the cotemporary non-imported animals of their respective breeds.

COMPARISONS OF COWS OF DIFFERENT BREEDS AT PUBLIC TESTS.

I.—SUMMARY OF RESULTS OF NINETY DAY BUTTER TEST AT THE WORLD'S COLUMBIAN EXPOSITION, CHICAGO, JUNE, JULY, AUGUST, 1893.

Cows in Test.	Milk Produced.	Fat in Milk.	Butter Credited.	Proceeds of Butter.	Cost of Feed.	Net Gain.
	Lbs.	Lbs.	Lbs.	Dollars.	Dollars.	Dollars.
25 Jerseys.....	73 489	3,516	4,274	1,747.37	587.50	1,323 81
25 Guernseys...	61,782	2,785	3,360	1,355 14	484 14	997 64

II.—SUMMARY OF RESULTS OF SIX MONTHS TEST, SHOWING PROFIT ON BUTTER PRODUCT, ESTIMATED FROM FAT.

PAN-AMERICAN EXPOSITION, BUFFALO, MAY 1-OCT. 31, 1901.

Cows in Test.	Lbs. Milk Produced.	Estimated Lbs. Butter	Value Butter at 25c. per lb.	Cost of Feed.	Profit in six Months
	Lbs.	Lbs.	Dollars.	Dollars.	Dollars.
5 Ayrshires.....	32,996	1,435	\$358.59	\$139.84	\$218 75
5 Guernseys.....	27,167	1,459	367.21	136.86	230.35
5 Holstein- Friesians.....	39,249	1,501	375.17	164.14	211.03
5 Jerseys.....	26,985	1,454	363.21	137 74	225 47

NOTE.—The Holstein Friesians and Jerseys were Canadian cattle, and not furnished or endorsed by the regular American Associations of breeders.

III.—AVERAGE COMPOSITION OF MILK OF DIFFERENT BREEDS.

[From a Report of the New York Agricultural Experiment Station, 1891.]

Breed.	Number Analyses.	Water.	Total Solids.	Solids No. Fat.	Fat.	Casein.	Milk Sugar.	Ash.	Nitrogen.
Ayrshires.....	252	86 95	13.06	9.35	3.57	3 43	5.33	698	.543
Guernseys.....	112	85.39	14.60	9.47	5.12	3.61	5.11	753	.570
Holstein- Friesians	132	87 62	12.39	9.07	3.46	3.39	4.84	.735	.540
Jerseys.....	238	84.60	15.00	9 80	5.61	3 91	5.15	.743	.618

HENRY E. ALVORD,

Chief Dairy Division, Bureau Animal Industry.
Spring Hill Farm, Fairfax Co., Va.

NOTE.—In preparing the foregoing, much has been taken, in a somewhat condensed form, from Farmers' Bulletin No. 106, of the U. S. Department of Agriculture, by the same writer. It is neither easy nor desirable to describe the same thing twice without largely making use of the same language.

THE DUAL-PURPOSE BREEDS OF CATTLE.

Editor Southern Planter :

The term "dual purpose breeds" of course means the two purpose breeds—that is to say, breeds which are adapted to the production of both meat and milk. In the current agricultural literature of the day, for the two decades subsequent to 1880, the place for such a cow on the farm was said not to exist. This at least was true of nearly all the agricultural literature produced in America. It was true also of nearly all the platform teaching on agriculture during the same period. The very idea of a place for the dual-purpose cow was only mentioned to be held up to ridicule. The dual purpose cow, or, as she was then called, the general purpose cow, was denounced as a "delusion, a myth, and a snare." To try to get milk from such a cow was compared to hunting prairie chickens with bull pups or seeking a winning trotting horse in a Norman.

Ex Governor Hoard was a leader in this crusade, and the signal ability as an advocate shown by this splendid man gave great impetus to the acceptance and extension of the unfortunate heresy. This flood of false teaching was greatly accelerated in its progress by depression in the prices of meat. The result was that many of the best herds of dual-purpose cattle in the land were so crossed with dairy blood that the ability to produce beef was greatly weakened, a blunder which the owners are now trying to rectify by using bulls of the dual types. It would be interesting could the facts be ascertained to know how many tens



GRADE SHORTHORN COW DUCHESS.

Weight in fair flesh	1,550 lbs.
Milk in one year.....	9,628 lbs.
Butter in one year.....	439.83 lbs.
Average test.....	4.4 per cent. butter fat.

This cow ate during the year \$33.93 worth of feed, and her products were valued at \$101.00, leaving a profit of \$67.07. The average cost of each pound of butter produced during the year was 7.7 cents.

of millions of dollars this false teaching cost the farmers of this country.

The faith of the writer on this question is as follows: I believe in a special dairy cow. She includes the Holstein, Dutch Belted, Ayrshire, Guernsey, Jersey, French Canadian and Kerry of the pedigreed breeds in America. Her place is on farms where cattle are kept almost entirely for the dairy products which they furnish, or in the stable of the individual who keeps but one cow. I believe in the special beef cow. Her place is on the range, or on the large farm where circumstances forbid the milking of the cows by hand. Her domain in America has probably more than attained a maximum, since large farms are being divided. I believe in the dual-purpose cow. Her place is on the arable farm, where the farmer is not a dairyman in the special sense, and where production is sufficiently ample to justify the rearing of steers for beef. This means that there is a place for her on probably two-thirds of the farms of the United States, and that on these she can be reared more profitably than either of the other two classes of cows.

There are in America five pedigreed breeds of dual-purpose cows. These are the Shorthorn, the Polled Durham, the Brown Swiss, the Red Poll and the Devon. Each of these will be considered below. In the meantime, it may be said that the dual-purpose cow is at present far more numerously represented in the graded than in the pure bred form. In the grade form, she may be possessed of various blood elements, but by far the larger number of grade dual-purpose cows are grade Shorthorns. This is due in part at least to the fact that Shorthorns in the pure form are far more numerous relatively than any of the other dual-purpose breeds, and they have been in the country for a much longer period.

These grade dual purpose cattle may be known by the following indications as to form: 1. Medium to large size for the breed or grade. 2. Good length and depth in the coupling, especially in the females. 3. Good development of udder and milk veins. 4. Good constitution as indicated by good width through the heart. 5. Head and neck inclining to long and fine; and 6. Ribs of medium spring, open spaced and cov-

ered with a good handling skin. In the pure form, these cows have essentially the same characteristics as to form, but with some differences pertaining to breed peculiarities. The more minute indications of correct form and function in detail cannot be given within the limits of this paper, but the reader who wishes to pursue further this phase of the question will find such details stated with considerable fulness in the book, "The Study of Breeds," by the writer.

SHORTHORNS.

The Shorthorns of one hundred years ago were good milkers. They were generally good milkers. This cannot be said of them to-day, but it can be said of many of them. That they are not generally good milkers is not the fault of the breed, but of the breeders. In America, the practice has been general of rearing the calves on the dams, a practice which, if long continued, will injure the milking qualities of any breed. Notwithstanding, the average milking capacity of the Shorthorn is unquestionably higher than the average of what are known as the distinctive beef breed. In Great Britain are some herds noted for the abundance of milk production which they possess. They have been milked for successive generations. In the United States are a few such herds, and in coming days these will be multiplied. But few doors stand so widely open as the present time and are so full of promise as that which forms the avenue to the breeding of milking Shorthorns.

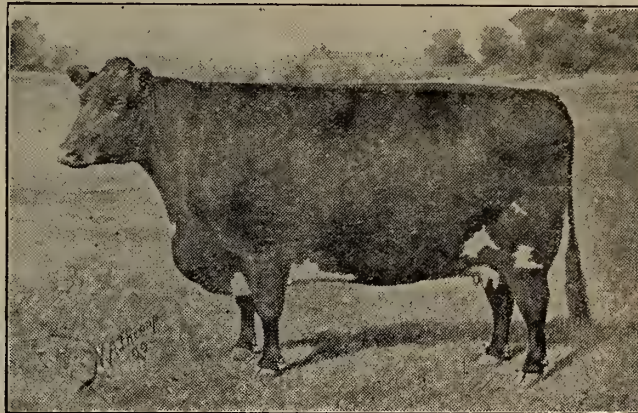
In the grade form good milking cows, essentially Shorthorn, can be found in almost any of the States north, east and west in considerable numbers. A good judge of the dual form can pick them up with safety, even though he should not be able to find out particularly about the breeding. The owners of such cows will not part with them unless paid a higher price than they would ask for other cows in their herds, and this shows very clearly the estimate in which they hold them.

The testing of Shorthorn grades in this country as to their milking capacity has only been attempted by a limited number of experiment stations. Foremost among these are those of Iowa and Wisconsin. The results in both instances were extremely satisfactory. It was found that Shorthorn grade cows not only produced as much butter per year as the best dairy cows obtainable, but they also produced it about as cheaply; and while thus producing milk they gave birth to calves which were grown into beef of the finest quality, and which brought top prices in the market. The particulars relating to these investigations may be obtained by writing to the stations which conducted them. It is to be hoped that those tests will be continued at the stations named; and that other experiment stations will take up the same line of testing.

No more important line of work could be engaged in by these institutions.

POLLED DURHAMS.

As is generally known, the Polled Durhams are of two distinct lines of ancestry. One of these is pure Shorthorn; the other is essentially Shorthorn—that is to say, it is the outcome of successive crosses of pure Shorthorn bulls upon muley cows of good size and form, and on their hornless progeny. These muley



POLLED DURHAM.—Goodness 15th, bred by J. H. Miller, Peru, Ind.

cows, when the crossing was begun some thirty years ago, were possessed of good milking properties, or at least many of them were. The former are Shorthorn in all characteristics except that they have no horns. The latter are essentially Shorthorn, and do not differ from the former in essential characteristics except in so far as their milking qualities are superior, because of inheritance of the same from the old muley ancestry on the side of the dams. To these general statements there will be some exceptions caused chiefly by the way in which the herds have been bred and handled. Where the herds have been milked, the milking qualities of the muley foundation have been improved upon rather than injured.

BROWN SWISS

Brown Swiss cattle are pretty uniformly good milkers. They have borne this character for generations. They are also good for beef production, but not quite so good, relatively, as for milk production. They are of good size, and they grow quickly. The steers attain to good weights, but the bone is a little strong for best results in beef making; and yet, for this purpose, they answer far better than any of the straight dairy breeds. On the continent of Europe, it would probably be correct to say that this breed of cows is more popular than any other. They have only been in the United States for about three decades, and yet they are now found in a majority of the States.

The breeders of Brown Swiss cattle in the United



BROWN SWISS COW MUOTTO.

States have not, in many instances, paid that attention to the maintenance and improvement of the milking qualities of their herds which should have been given to this feature. Many of them have committed the egregious mistake of suckling the calves upon the dams, a process which, if long continued, will injure the milking qualities of any breed. In the United States, milk records have not been kept of the performance of herds in milk production to the same extent as with the Red Polls and some other breeds; and where these have been kept, comparatively little effort has been made to place the results before the public. The breeders will say that they rely upon the merits of their cattle to do this, but they forget the important truth when they talk thus that merit properly placed before the public will accomplish much more for a breed than merit hidden in various little corners. The Brown Swiss cow Brienz No. 168, in a public test in Chicago, 1891, produced 245 pounds of milk in three days, which contained 9.32 pounds of butter fat. Good herds of Brown Swiss cattle will easily average 6,000 pounds of milk in a year.

RED POLLS.

The Red Polls originated in the counties of Norfolk and Suffolk, England. Their introduction into and diffusion through the various States has been chiefly made through the last three decades. They are rapidly growing in popularity. There is unquestionably a fine future before this breed in the United States. They are already found in a large majority of the States in the Union.

Red Polls are not so large as Shorthorns, but are somewhat larger than the Devons. The average of a mature cow would be somewhere in the vicinity of 1,200 pounds. They are of sufficient refinement in form, and, as the name implies, are red in color and polled.

The dual quality in Red Polls has been more clearly established than in other breeds of the dual types—that is to say, the records of milk and meat produc-



RED POLL COW BABY RUTH, No. 8324.

tion are more ample from which to draw conclusions. In England are many herds in which records have been kept of all the cows in the same for many successive years. Data is also accessible relating to the performance of many animals on the block and in the fat stock shows. Whole herds, in some instances exceed-

ing 100 animals, have averaged from 5,000 to 6,000 pounds of milk in a year. In several instances, cows have produced more than 10,000 pounds per annum. From these same herds steers have been sent, from time to time, which have been winners at the Smithfield in competition with steers of the strictly beef producing types.

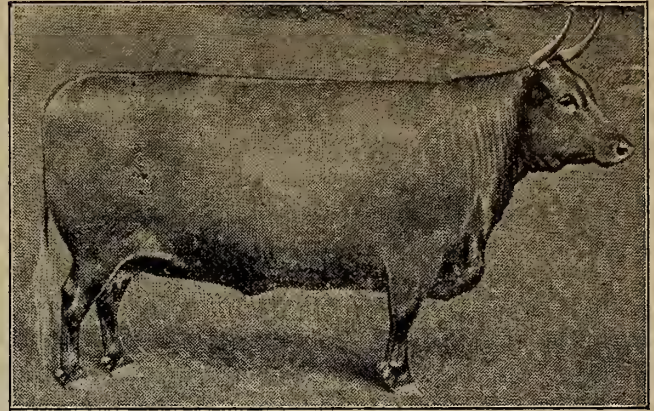
In the United States also in several instances Red Polled cows have produced more than 10,000 pounds of milk per annum. Notable among such producers was the cow Mayflower 12th in the herd of Captain V. T. Hills, Delaware, Ohio. In this herd the famous cow Mayflower 11th No. 2965, produced 52,858½ pounds of milk in five years, a record that is probably unrivalled in the annals of milk production by one animal. It has also been found that Red Polled high grade steers properly fattened command top prices at the stock yards.

Red Poll sires are also very satisfactory when used in grading by crossing them on common stocks. The progeny are polled, and the inheritance shows most strikingly the prepotent character of Red Poll transmission. This crossing should answer well on farms in the Atlantic and Southern States, as well as those North and West, since the Red Polls are somewhat less in size than Shorthorns.

DEVONS.

The Devons are a tidy little breed of cattle, which, as the name implies, originated in Devonshire, England. They were noted for meat and milk production more than a hundred years ago. They are the smallest in size of all the dual-purpose breeds, and yet the average Devon cow matured and in good flesh should weigh about 1,000 pounds. They are a whole red in color, usually a dark red, and are neat in form. Compared with Shorthorns, they are less massive, somewhat finer in bone, longer relatively and finer in the nose, and have longer, finer and more upturned and spreading horns. They are also more active on foot. In New England, there are some fine herds of milking Devons in the pure and also in the graded form. The same is true of Pennsylvania, Ohio and some other States. Some of these average more than 6,000 pounds of milk of good quality per year. Many of the herds on the other hand have been grown only for beef and for successive generations. The milking qualities of these are not a little impaired. There is no question of the fact, however, that Devon cattle fatten readily and make an excellent quality of beef. They kill well—that is to say, the dressed meat in a carcass is relatively large. Owing to the want of massiveness in the frame, and to the active habits of the Devon cattle, they have peculiar adaptation for broken and somewhat rugged pastures, and for condi-

tions where production is not of the very best. There should be a large field for Devon cattle in the Southern States. Mr. W. C. Edwards, of Rockland, Ontario, Canada, has one of the best herds of Shorthorns in



DEVON.

Canada. He keeps them on productive land. He has also a good herd of Devons. He keeps them on rugged, hilly and rocky land. He told the writer some time ago that while the Devons did well under those conditions, he was satisfied that under the same conditions the Shorthorns would not be a success.

It has been shown that there is a wide place for the dual-purpose cow. It has been shown that we have dual purpose cows in the grade form and dual purpose breeds in the pure form. It has also been made apparent that because of well meant but misleading teaching, during the last two decades the dual element in grade cows has gone backward rather than forward. Now that public sentiment is coming in like a flood in the opposite direction, how is the farmer to proceed who desires to build up a herd of dual-purpose cows? The plan is simple if the material can be found. Let him purchase dual-purpose cows of correct form wherever they can be found. He need not be much concerned about the blood elements if he can get cows of sufficient size and correct form. If these are considerably mixed, it will be no detriment to the work which he is trying to do. In making such purchases, the only outlay is for the animals. Nothing additional has to be paid for blood. Thus far the work is easy.

The next step is more difficult. It is not so easy to get suitable bulls. They should be chosen from the dual purpose breeds, and should invariably be purely bred and of good individuality. If from dams and grandams of superior milking capacity, the writer would not object, though they should have a preponderance of leaning toward the beef form—that is, to the form that guards stamina and vigor. Any tendency toward undue fleshiness in the female progeny

can be counteracted by selection. Continue to choose males thus, and from only one breed, and the result will be dual-purpose cattle.

But it may be objected, will not a good many of the progeny be unsuited for retention in the herd? Certainly, that is true of all breeding, but it may be expected to lessen as this style of breeding, wisely conducted, progresses. Unsuitable animals will appear in all herds every season, no matter what the style of breeding, and when they do they must of course be sent to the block. These undesirable variations will decrease in proportion as line-bred and vigorous males are used.

In the principles that govern the breeding of dual purpose cattle, there is nothing essentially difficult. In the practice, there is, at the present time. Suppose the individual fixes upon the Shorthorns, the Polled Durhams or the Devons from which to draw his bulls. In the United States it is not easy to find such bulls in these breeds, owing to the general trend of the breeding during recent years. But some of them can be found, and their relative numbers will increase since more and more attention is going to be given to the breeding of this class of cattle in the future than in the past. The breeding of the dual type of Shorthorns will unquestionably have an important future in this country. It has had an important past in England, and it has an important present.

In answer to the statement that dual purpose cattle cannot be bred as such, the existence of the Red Poll and Brown Swiss breeds furnish sufficient evidence regarding its falsity. Here are two breeds that have possessed the quality for a long time, insomuch that it is stamped upon them as a characteristic. If dual types can be bred in one breed, they can also in another. And because of this fact, linked with the great demand for such animals, the day is near when they will overshadow other types of cattle in this country on the arable farms.

THOS. SHAW,

*Recently Professor of Animal Husbandry at the
University of Minnesota.*

SPECIAL BEEF BREEDS FOR SOUTHERN FARMERS.

Editor Southern Planter :

INTRODUCTION.

Cattle may be classified in one of two ways—either as natives, common or graded, and pure breeds, or as special beef, special dairy, and general or dual purpose. A half century ago the predominating type of cattle in the country was the native or scrub, but during the past few years the introduction of pure bred sires has so changed and improved the quality of our cattle that the larger part of them may be properly

classified as graded stock ; that is, containing one or more crosses of the pure-bred sire on the original native cows. Pure bred cattle are those entitled to registration by reason of their long lineage in which no admixture of foreign blood appears. This classification is, of course, defective in that it does not distinguish the qualities, or better, the functions of the several kinds of neat cattle.

In the United States we have a trifold interest in breeding cattle in that we raise them for the production of milk and butter ; hence the distinct dairy type ; for beef ; or for the purpose of combining both beef and milk, so far as possible, in one and the same animal. This classification is very satisfactory in many respects, though it is a question sometimes to know where to place certain of the milking strains of Shorthorns, Red Polls and other animals of the dual-purpose type.

BEEF BREEDS IN THE SOUTH.

Following the above classification it appears that there are five principal types of pure bred beef cattle scattered over the South, and well adapted to that portion of it comprised in the Appalachian region which is sometimes called the middle South. These breeds are the Shorthorn, Hereford, Aberdeen Angus, Galloway and Sussex. Of course, there are some other well known beef breeds in the United States, and several well-established ones, that might be introduced from foreign countries, but as they have not been tried in the South, their adaptation to our conditions is simply a matter of conjecture, while the purpose of this article is to discuss briefly the qualities of some of the breeds which have been resident long enough in the country to enable a fair estimate of their value to be safely made.

ORIGIN OF THE BREEDS.

Strange as it may seem, all the five breeds mentioned originated in Great Britain ; the Shorthorn, Hereford and Sussex in England, and the Aberdeen Angus and Galloway in Scotland. The oldest of these breeds is the Shorthorn or Durham, the latter name being taken from the county in which they originated. They are a cosmopolitan breed, their first improvers being the Colling Bros., of Ketton, England, who commenced their work previous to 1780. Among other distinguished fanciers of these cattle were Messrs. Bates, Booth and Cruikshanks, men who have stamped their ideals on the strains which bear their names. It is interesting to note that the first importation of Shorthorns in America is said to have been made by Messrs. Goff and Miller, of Virginia.

The Hereford originated in Herefordshire, and references were made to them by Speed and Marshall in 1627 and 1788. Benjamin Tompkins and John Price were the two most celebrated improvers of this breed

which is first supposed to have been imported into the United States by Hon. Henry Clay, of Kentucky, in 1817.

Aberdeen Angus cattle originated from the native stock of the country, and the most notable improver of the breed was Hugh Watson, who established the Keillor herd in 1808. This breed was first introduced into the United States in 1873. Wherever it has gone it has made ready friends for itself, owing to the splendid feeding qualities of the animals and their uniform appearance and kindly disposition.

The Galloway cattle originated in the district whose name they bear in Scotland. Being reared in a cold, bleak country, frequently 1,500 feet above the sea level, they are a hardy, aggressive breed, and have been celebrated for many years for the high quality of meat they produce. They were first introduced into America by Graham Bros., of Vaughan, Ontario, Canada, in 1853. Since then they have found favor in almost every section of the United States.

numbers in America. It is a very difficult matter to discuss the relative merit of these different breeds, because there are splendid individuals in all of them, and the success of a breed is more frequently measured by environment, and the skill, care and treatment given it by the owner than by any other factor. It is impossible to discuss the relative merits of the five breeds here mentioned in detail, but in order that the reader may get a fair idea of their many excellent qualities, the following table has been prepared, which gives a fair idea of their relative merit. To study them intelligently, it is first necessary to consider their special qualities, contrast their strong and weak points, and so ascertain their value for special locations.

WHY PEOPLE FAIL WITH IMPROVED STOCK.

One reason why so many people have become disgusted with improved breeds of stock is due to the fact that they have selected their breeding animals without regard to the environment from which they came and to which they are naturally best adapted.



The Sussex cattle originated in Sussex county, England, and were supposed to have been cotemporaneous with the Devons at an early date. They made five records at the Smithfield Fat Stock Show in London many years ago, though a Sussex herd book was not established in England until 1860. They were first imported into the United States by Hon. Overton Lea, of Nashville, Tenn., in 1884, and while they are a most excellent breed, they are not widely disseminated in the United States, owing to the comparative newness of the breed and the small number of persons who are interested in their production.

A COMPARISON OF THE "QUALITIES" OF THE SEVERAL BREEDS.

This, then, will give the reader some idea of the origin of the principal beef breeds introduced into the South. As our forefathers all came from Great Britain, it is easy to understand why the special types of beef animals developed so successfully across the water, have found so much favor and increased so largely in

Then, after purchasing the animals, they have failed to realize that improved qualities are engrafted and maintained by reason of the greater skill exercised in the care and feeding, breeding and management of the stock. Animals brought up under favorable conditions, and suddenly removed from these, will surely deteriorate in the direction of the scrub. Considering the vital interest beef husbandry should have for our people, it is very important that they familiarise themselves with the qualities of the various breeds of stock before purchasing them, else they may choose animals unsuited to their environment, and so reap a harvest of thorns instead of shekels, though, in the long run, their own carelessness is the cause of their final misfortune.

The Shorthorns give their best results on good pastures and on arable lands. They also do well on the range, the Shorthorn grades being the predominating type of graded cattle found in every part of the United States. Probably they have given better results on

A COMPARISON OF THE QUALITIES OF THE SEVERAL BREEDS.

	SHORTHORN.	HEREFORD.	ABERDEEN ANGUS.	GALLOWAY.	SUSSEX.
<i>Dissemination</i>	All over U. S. and in many foreign countries.	Widely distributed in U. S. and Canada, also in S. A. and Aus.	Bred in many States and in many foreign countries.	Found chiefly in Mo., Ill., Kan., Minn. and Canada.	Limited to Tenn., Me., Ill., Ind., Okl., Tex., Kan., Colo., Canada.
<i>Hardihood</i>	Good, predominate on ranges all over country.	Best results on ranges of south and southwest.	Medium.	First class.	Fair.
<i>Conformation</i>	Rectangular, blocky, symmetrical outline and graceful carriage.	Rectangular, compact body; smooth outline; docile.	Low, sturdy, smooth, cylindrical in outline.	Low set, sturdy, robust, coat curly, features fine.	Smooth and symmetrical.
<i>Color Markings</i> ...	Red, white or roan mixed indiscriminately.	White chiefly on face, breast belly and back; red on neck, side and quarters.	Black.	Black.	Red.
<i>Registration</i>	367,950 U. S. H. B.	95,000 A. H. B.	32,500 A. H. B.	14,491 A. H. B.	No U. S. record book.
<i>Appreciation</i>	The most cosmopolitan and best known breed.	Second only to Shorthorn.	Not so well known as some other breeds; great favorites where introduced	Not so well known as breeds previously mentioned.	Popular where known
<i>Adaptation</i>	Very wide; best on arable, level lands.	Wide adaptability; splendid rustlers for range country.	Temperate climates; arable, undulated lands.	Fine for range purposes, especially in northwest.	Best for temperate climates and rich pastures.
<i>Size</i>	Largest.	Practically equal to Shorthorns.	Nearly equal to Shorthorns and Herefords.	Do not scale quite so well as other breeds mentioned.	Larger in frame than Galloway, though smaller than other breeds.
<i>Maturity</i>	Unsurpassed — 24-30 mos.	Equal to Shorthorns.	Equal to Shorthorns and Herefords.	Under "forced feed," early.	Not quite equal to Shorthorn and Hereford.
<i>Grazing</i>	Excellent on good pastures.	Unsurpassed.	Fair.	Unsurpassed.	Excellent.
<i>Feeding</i>	First class.	About equal to Shorthorn. Inclined to patchiness under forced feeding.	First class; unexcelled	Take on flesh smoothly; good feeders.	Put on flesh rapidly and distribute it well.
<i>Meat</i>	High per cent. of good meat; excellent quality.	Kill well; produce fine juicy meat.	Marbling of meat slightly better than Shorthorn or Hereford; kill well.	Finely marbled and very delicate in flavor.	Excellent quality, bone a little coarse.
<i>Milk</i>	Amount small; quality good.	Quality good; quantity deficient.	Quality good; quantity deficient.	Quality good; quantity deficient.	Excellent, but deficient in quantity.
<i>Utility for Cross'g</i>	More largely used in past than all other breeds.	Good on natives and on Shorthorns and Galloways.	Excellent on common stock and Shorthorn grades.	Excellent on common stock; remarkably prepotent.	Not been used extensively for this purpose.
<i>Weaknesses</i>	In some instances weak constitution due to in-and-in breeding; tendency to sterility.	Poor milkers, large dewlap, light in thigh.	Indifferent milkers—somewhat lacking in scale.	Poor milkers; slightly deficient in scale.	Dissemination too limited to enable a correct estimate.

the ranches of the West and Northwest, and in the Appalachian region of the South, than some other breeds. The Shorthorn grade is still regarded by the majority of American breeders and feeders as the best general-purpose animal that has ever been produced.

The Herefords are well adapted for rustling and hunting their food over wide areas, They have given

the most excellent results on the ranches of the South and Southwest, where they have increased wonderfully in numbers in the past few years. In fact, the Hereford sires have been so largely used on some ranches that the type of the native has entirely disappeared and given place to the popular white face and red markings of the Hereford breed. As rustlers for range pur-



Hereford Bull at the head of the "Herbert Domain Herd of Tennessee."

poses, especially in the Southwest country, the Herefords have something of an advantage over any of the other improved breeds at the present time.

The Aberdeen-Angus, on the other hand, has not been tried for that purpose so extensively as either of the other breeds. Naturally, they are more like the Shorthorn, and give better returns on arable lands and good pastures. For stall feeding purposes, they are probably unexcelled, taking on flesh and fat more rapidly and uniformly than any of the other breeds, and being short in the leg, compact in conformation, and cylindrical in appearance, with a jet black coat, they finish up in the most superb form when placed on "forced feeding."

The Galloway, on the other hand, is well adapted for range purposes. It does well on the Northwestern prairies, where the winter is particularly trying. It has a long, shaggy, curly overcoat, with a thick, fine undercoat, enabling it to stand the cold weather with comparative impunity.

The Sussex are more of the type of the Shorthorn and Aberdeen-Angus, and will give their best results when placed under a similar environment.

In the diversified country of the Appalachian region, the animals best adapted for range purposes will be the grade Shorthorns, Hereford and Galloway. Those best adapted for maintenance on the rich valley lands or the excellent pastures that prevail over wide areas of this section, or for winter feeding on surplus corn and cotton products of the rich river bottoms, are the Shorthorn, Angus and Sussex.

MAINTAINING IMPROVED STOCK.

The next question that arises is as to the quality

and quantity of food the various improved types require. It is impossible to answer this question specifically, for it is a matter that has not been worked out experimentally. While individual animals vary, the breeds as a whole do not differ materially as to the amount of food consumed for a pound of gain. In sections where white clover or blue grass, or other tame pastures can be established and utilized for the entire summer and partial winter grazing as well, there will be no difficulty about maintaining any of the above breeds, while for the supplemental feeds required for the winter feeding, or for the finishing of the grades of these breeds, there will be still less difficulty. The whole area is well adapted to the cultivation of corn. On improved lands, even of upland types, 30 to 40 bushels of corn can be raised under intensive culture, while on the bottoms it will frequently go to 100 bushels. Cotton is raised more or less in all parts of the region under consideration, and cotton seed meal, combined with corn meal, forms a perfect concentrate for the maintenance of breeding animals or for the winter feeding of the grades. In addition, Soy beans do well, and will produce from 25 to 40 bushels per acre under proper treatment, thus adding another concentrate of the highest feeding value for the purpose mentioned. Pea hay can also be produced in large quantities at a moderate cost. Corn stover can be had in abundance. Silage, containing from 15 to 25 per cent. of cow-peas, can be made from sorghum or corn at a cost of about \$1 per ton, while yields of 12 to 15 tons per acre show the readiness with which the soil will yield suitable crops for the winter feeding of beef cattle when given proper culture and fertilization. There is thus no difficulty



Grade Hereford Calves in the "Herbert Domain" Herd, showing the result of crossing a pure bred sire on native cows.

in the way of maintaining either the improved breeds intact, or the grades on the range in the summer or "on feed" in the winter.

If there is any difficulty in the way of introducing or handling improved stock by reason of the scarcity or high prices of suitable food stuffs, it is certainly the fault of the farmer, because nature has done her part in that she has provided an environment in

agement of improved stock. While education will make a live, up to date stockman, the process is often slow with inexperienced and untrained laborers. Men who have learned to till the fields, or to cultivate cotton, do not take kindly to what they term the drudgery of the live stock business, an idea that loses caste very quickly when one becomes well acquainted with the live stock business. The man who would be a successful feeder and breeder must know his animals individually; he must study their needs each day in order that he may supply their varying wants promptly. He must grow up with his animals, as it were, and they must become a part of his being. This does not require personal sacrifice to the real student of animal production, yet it constitutes the principal essential of success in a stockman. The man who enters into the breeding of live stock should have an inherent love for animals, and be willing to devote his time and attention, his thought and his energies, to the development of animals of unequalled excellence, for this should be the object of every successful stockman.



Miss Stufe, Lady Nosegay French and Baron Roseby, types of Aberdeen-Angus cattle, owned and bred by A. L. French, of Fitzgerald, N. C.

which the most desirable crops for the maintenance of cattle can be grown to perfection, whether the end in view be cheap fodder or hay or rich concentrates.

STOCKMEN NEEDED.

A little study and forethought will overcome the difficulties of the feeding problem, but there is another obstacle which may prove more serious, and that is the lack of generations of training in the man

NEED OF A FENCE LAW.

Another and most serious difficulty in the way of introducing improved stock in the Appalachian region is due to the need of an adequate fence law in many sections of the country. In other words, the owner of a farm must fence his land to keep out his neighbor's stock. This certainly seems to be wrong, and is one of the most serious drawbacks to stock-husbandry at the present day. It is a drawback because it permits the slothful and indifferent man to turn loose upon the community males of the most in-



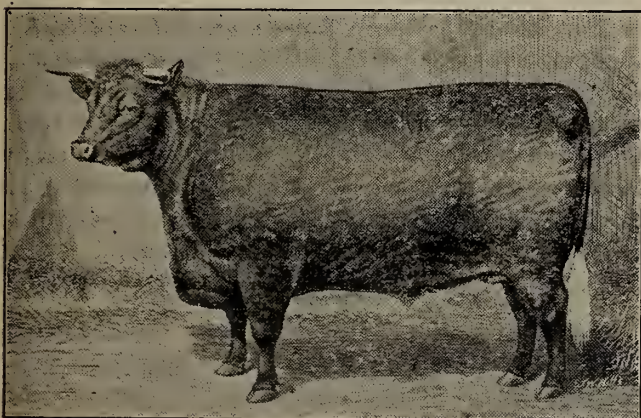
different quality, which not only prove a menace to the highly bred stock of the progressive farmer, but also seriously interferes with the legitimate development of his business. The present system of fencing, as it exists in some of the States of the Appalachian region, is altogether wrong, and must be righted before our live stock will improve as rapidly as the natural conditions now warrant. The sooner the live stockmen can get together in a grand cooperative movement, and see that this unjustifiable nuisance is abated and properly regulated by law, the better it will be for every agricultural interest of the South,

as in many other sections of the country. In the summer time, the large number of running streams provide an abundance of pure water, and in no section of the United States do trees grow more vigorously or lend more grateful shade during the heat of the day. In the winter time, snow rarely falls, and if it does, stays but a day or two, while it is a matter of common remark among "the oldest inhabitants" when the thermometer goes below zero. Even then it will only be a temporary matter, lasting for two or three days.

ANDREW M. SOULE,

Vice Director and Agriculturist.

Experiment Station, Knoxville, Tenn.



SUSSEX STEER.—Rosewood, Champion Yearling, Fat Stock Show 1888, the property of Mr. Overton Lea, Nashville, Tenn.

for there is no interest more widespreading in its influence, or which needs to be developed more consistently and rapidly for the greatest good of our farmers than our animal industries.

A SUPERB CLIMATE.

Some have urged that the Southern climate is hot, and that the heavy beef breeds will of necessity not do so well. There is nothing in this contention so far as it applies to the Appalachian region. The elevation of the country above sea level is sufficient to provide the most equable climate, both in summer and winter. Extremes of heat and cold are not met with

FOOT AND MOUTH DISEASE IN CATTLE.

Editor of Southern Planter.

Secretary Wilson's appeal to Congress for an emergency appropriation of \$1,000,000, to enable the Department of Agriculture to suppress the foot and mouth disease that has broken out among cattle in New England, should meet with the hearty approval of every American farmer.

In my visits to Germany and Switzerland I have been frequently struck with the ravages of this disease, despite the unceasing activity of the governments and local authorities, as well as of agricultural societies, live stock insurance companies and private individuals. In my foot tours through the Swiss Alps, last summer, I noticed a large number of roads and paths leading to infected districts that were closed and guarded. Both of these countries have adopted every known precautionary measure, and are well provided with very capable veterinarians, but still the "Maul- und Klauen seuche" holds its own.

In Germany it is quite probable that a new stock disease law will be enacted at this session of the Reichstag or the old quarantine law amended, as it has been shown that quarantining foreign cattle on the German frontier has not been able to prevent the spread of the disease.

SAM'L ROLFE MILLAR.

Warren Co., Va., Dec. 10, 1902.

BREEDS OF SHEEP FOR THE SOUTH.

Editor Southern Planter :

Sheep fill a most important position in advanced agriculture. The presence of a flock, on any farm, may be taken without question as an indication that it is in the hands of a wise and successful farmer. There are several reasons for this. The mere feeding of sheep is conducive to profit. There is no other animal kept on a farm which returns so much income directly, and no other which exercises so useful a result on the land by its mere feeding. It is an omnivorous feeder, and the larger part of its feeding is made up of what would otherwise be wasted. It gleans the fields, it picks up all the small residues of other animals feeding, and it turns its food into three different sources of income to the farmer. Moreover, by its needed demands on the farmer it forces him to practice the most economical methods of working his land, and growing crops. Let us give at this point one single example. There is a fodder plant of the turnip family known as rape. Two pounds of seed sown on an acre at the last working of the corn crop, or on any other convenient otherwise idle part of the farm, will feed thirty sheep from the time the corn is cut to the snow fall, or even later, as conditions may permit. The rape will renew its growth early in the spring, and contribute still more feed until the next crop, which is usually oats, is sown; and then after it is harvested the growth on the stubble will contribute still more feed. This is only one instance, mentioned in the outset of this article, among many which go to show the simple and easy manner of supporting a flock on any farm under common methods of culture. And in this manner the feeding of the flock will come in a sort of rotation with other uses of the land, every one of which is conducive to economy, profit, and improvement of the soil by which other parts of the farm management may be increased in productive value. There is no difficulty about it. The only single thing to be done is to go and do it by whatever easiest method it may be. And as soon as one season has given the needed experience, the work will be easier and simpler, and the owner of a flock will be amazed that he did not fall into the habit earlier. We are not just now studying the methods by which the flock may be supported and managed all through, but only the kinds of sheep which are best suited to the conditions of agriculture in the South; indeed, everywhere in fact; for the special circumstances by which the Southern farmer is surrounded and controlled are varied very little by his special environments. In fact, his circumstances make it an easier business to him than to any farmer in other localities, and one single thing only need be mentioned to make this very plain. This is,

that in the South sheep may live every day in the fields, and gather their subsistence on what in other localities might go to waste as far as making money profit out of it; and a flock may be so managed as not only to subsist itself with ease but at the same to so improve the soil by the improved conditions—growing out of the feeding of the flock, as that each acre of land may soon double its produce without any other addition to the resources of the farm.

And in thus adding to these resources it matters little what kind of sheep is kept. A sheep is a sheep, in this respect; and it is only a matter of convenience and fancy which breed is chosen for this use. Yet the fancy goes a long way in regard to the pleasure and profit of keeping a flock. Tastes differ in this respect; and so the kind of sheep chosen should please the fancy of the owner; for what we love best in this respect we make the most successful and profitable.

BREEDS OF SHEEP MOST SUITABLE.

Sheep may be distinguished as fitted for the farm or for the range, and some for the special purpose of rearing lambs for the early markets, when there is a demand for tender lamb of two or three months' growth, which has been increased to the greatest extent by skillful feeding. On account of the favorable climate and nearness to the best markets for these, those sheep most eminently fitted for this use in the South should be first noticed. Sheep, indeed, are the most easily adapted to varying conditions of all domestic animals; but while this is so, and by a little education a flock may be trained to bring the lambs at any desired time, yet there is a breed which has been so trained for many years as a special business that lambs may be had at any time of the year, or in fact twice in the year, if it is desired. This special breed is known as

THE DORSET BREED.

In our description of the best sheep for the South this one we choose first, both for the ease of its management and its value. In addition to these special qualifications, it has the advantage of having been reared in a warm climate, very much similar to the average of the Southern States; and, which is a most important consideration, the principal great consuming markets for the lambs are in close proximity to the most convenient and suitable localities for the breeding and rearing of them.

The Dorset sheep is a horned breed, which is a native of the county of Dorset, in the south of England, of which the climate is mild and pleasant, having no severe weather in the winter, but the flocks are able to pasture out the whole year. The climate has its special features repeated in several localities of the South, especially on the sea coast and adjacent lowlands, with the low ridges further west. Both rams



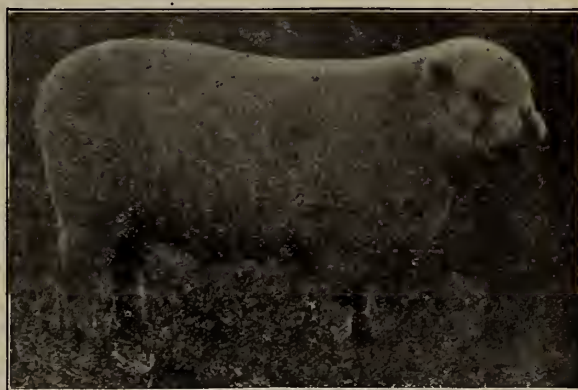
DORSET.—Sweepstake Ram at the great Omaha Exposition. Bred and owned by R. Stuyvesant, owner of the Tranquility Stock Farms, New Jersey.

and ewes are horned; the face is white, broad, and neatly formed, the horns curving spirally on each side, giving a solid, stately and substantial figure to the whole animal. This breed is able to maintain itself in defense against dogs, which in the South are really the only serious obstacle to the success of the flocks; for the other conditions, as the weather, the soil, the climate and the feeding, are more favored by nature than in any other part of the whole Union. In fact, we have everything in favor of the shepherd's industry, and our especial conditions of agriculture all go to make sheep keeping not only profitable in itself, but advantageous to the whole culture of the soil, under our greatly varied system of agriculture. This useful sheep is exceedingly hardy, and less subject to diseases which arise from neglect than any other breed. It yields a fleece of five pounds of pure, white, medium fine wool, most favorably adapted for the smaller kinds of home manufacture common in the South. The wethers, when fed for market at two years of age, yield a dressed weight of eighty pounds of excellent mutton. On the whole, we may very justly give this breed the first place in the list of sheep best adapted to Southern conditions. Its long and careful breeding has given it a strong constitution and a remarkably successful ability of the ram to impress its character on the native sheep, so that nearly every half bred lamb is horned like its sire.

THE SHROPSHIRE.

For several good reasons this sheep enjoys the reputation of being the most desirable of all the breeds. It has been bred everywhere, and from Florida to the far Northwest among the great range flocks, it maintains its reputation for hardiness in cold or heat under spare or luxurious living, and as the mother of strong hardy lambs. It is one of the medium-sized breeds

which are most suitable to the conditions of the Southern farmer; quite as well as to those prevailing in the far West and Northwest, where the flocks range over the dry ranges, and have to contend with the fierce storms which the Eastern shepherd is unable to realize even in his dreams. It is one of the oldest breeds, and one of the first to be brought from its English home, on the most fertile farms of that well farmed country, and it has maintained here its character for hardiness, good feeding, healthfulness, and its value for its mutton and wool. Its fleece is well adapted to the conditions peculiar to the South, especially for the use of the local country mills, and is marketable at the highest prices anywhere. The wool is between fine and coarse, and the fleece varies in weight as its keeping may have been, from six to eight pounds for ewes, and proportionately more for wethers and rams. It will yield over twenty pounds to the quarter of the very best of mutton, when in moderately good condition, after a reasonably good feeding. It fattens easily, and for domestic use may be taken from the pasture any day in the year, and furnish the best of meat. Its habits are quiet; it is not given to wander from its pasture or its home. It is an attractive sheep, having a dark face, varying from black to a light smutty or brown color, all over, or in patches. It is an excel-

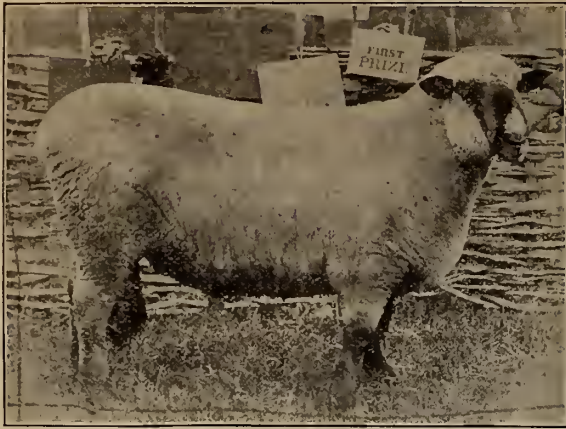


SHROPSHIRE.—First Prize Shearling Ram at the Royal Show, owned by R. P. Cooper.

lent dam for the early market lambs, and when bred to a Dorset ram, or when the ram of this breed is used with the common native sheep, the lamb will easily reach a weight of fifty pounds at ten or twelve weeks age. The Shropshire ram is the best animal to cross on our common native Southern ewes, and two crosses will produce sheep which will easily go for purebred. It may be said, that with the exception of the Merino ram, it is by far the best kind to cross on our common Southern ewes for the purpose of improving a flock.

THE HAMPSHIRE.

This breed of sheep was introduced into Virginia by George Washington, and until its complete destruction



HAMPSHIRE.—Cambuscan, First Prize Hampshire at the Royal Show, owned by J. G. Massey, of Colorado.

in the war, was quite common and conspicuous by its dark face and large size on the best of the Southern farms. Since the prostration, as may be said, of Southern agriculture by the barbarities of war, it has disappeared except in a few localities, but even there and under partial care it is now what it should be by its nature, the finest of those dark faced breeds commonly called the Down breeds. It is a native of the Hampshire downs, or rolling meadows of the South of England, and is one of the most ancient of the English breeds. It is a large sheep and has a heavy fleece of wool longer than that of the Shropshire. An average fleece should weigh eight pounds, and the wool is commonly over six inches in length. But it is most valuable for its mutton; the flesh is tender and well mixed with the fat, and more live weight of carcass is made in proportion to the food by this breed than by any other. A well fed yearling wether of this kind will easily make a dressed weight of eighty to ninety pounds. The Hampshire ram is the most valuable of all breeds for crossing on the small native sheep, although its size and weight might seem to be unsuitable for this use. The size of the ram, however, does not interfere with the progeny in any injurious way; for it is the ewe, and not the ram, which gives the size to the new-born lamb. The ram gives to the lambs the habit and ability to make growth after birth, and it is the fact that the most growth from the same allowance of food has been made by this breed in every test made; and this ability to make rapid and profitable growth is not equalled by any other breed, even under ordinary conditions of the farm. This characteristic is the most important for the consideration of the farmer who is rearing sheep for profit. For the same feed this breed gives more wool and more flesh than any other, and thus the farmer who desires profit may well choose this for the means to be used.

THE SOUTHDOWN.

This sheep is universally considered by all experts to be the most beautiful animal of the kind in the world. At the exhibitions of live stock the pens occupied by these sheep are the most observed and frequented, and the beautifully formed, smoothly woolled, and generally attractive animals in the pens set apart for the Southdowns attract the attention and the admiration, even of the children. Its beauty of form; smooth, clean, round body, short legs, clear fine head, and broad saddle, combine to attract those who never owned a sheep, as well as every observer who has or does. Its history justifies this praise. For, during nearly two thousand years this sheep has existed and furnished industry and wealth to the English farmers in that part of that fertile and beautiful isle commonly known as the Downs. This breed has been used for improving nearly every other. The Shropshire, Hampshire, and other so called Down breeds, all owe their finest points to the infused blood of the Southdown, while most of the more than dozen breeds, bred in England—the home of all our American sheep except the Merino—have been improved by the mixed blood



SOUTHDOWN.—Champion Shearling Rams at the Royal Show, 1902, owned by the King of England.

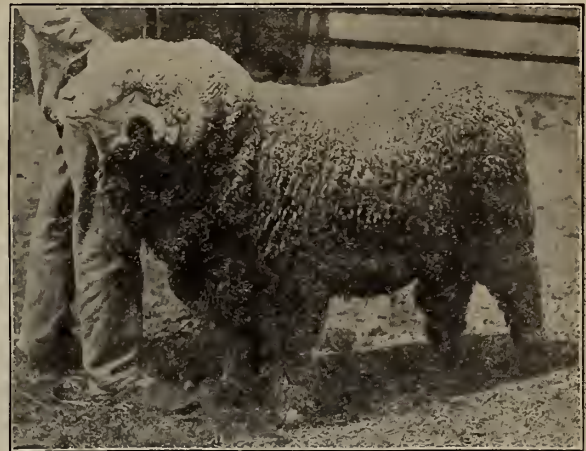
of this beautiful sheep. One becomes in love with this sheep on sight; and if sheep were kept only for their beauty, this breed would be the only one in existence. But it is not only beautiful, but is good as well. That this should be so consists with the value put on it as an improver of every one of the so called Down breed; and not only of these, but several other breeds, have been refined by the mixture of Southdown blood in them. For itself alone it is the choice of every wealthy sheep farmer in the South, whose lawn is ornamented as well as made useful by being made the pasture of a flock of these sheep. It is chosen to ornament the parks of the great cities of the North, and it is not only beautiful but it is as good as it is beautiful. Its carcass furnishes the very best mutton in the most

desirable and economical form, such as the saddle of mutton, the leg, and the shoulder; while every other part of the animal is economical for use on the table on account of its fine bone and the liberal covering of sweet, juicy meat. For this natural excellence it has been adopted as the general improver of other breeds, and even now a cross of it is found desirable by breeders of the other so called Down breeds. For this refines the gradually increasing coarseness of the others, and so adds to the value of the flock so improved. There is no other sheep which in so many points deserves general admiration; but yet it is not by any means the most popular. This test of value is owned by the Shropshire most of all the coarse wool breeds; and the Southdown has several other successful competitors. Its lamb by a Merino ewe is the plumpest and fattest of its age of all other kinds; but yet the coarser, heavier breeds are more popular as sires for the market lambs. For ornament on the lawn of any farmer who can afford to sacrifice a dollar or two to gain satisfaction in this way, or for their beauty in a well kept meadow, there is no other breed equals this; and as well as its beauty, it supplies the best of all mutton, although at a little higher cost. For the farmer who is not wholly in pursuit of profit all the time, and is desirous of sacrificing a few possible dollars for the sake of pleasure, this beautiful sheep cannot be excelled. It is not meant that it is not a profitable sheep, but that it may not be as profitable as some of the other breeds described; and yet it may be so under special circumstances, for one will always do the best with what he loves the best, and so this sheep may really be the most profitable because, on account of its beauty of form, it will attract not only the care and attention of its owner, but his love and admiration as well. When used as the sire of market lambs by a Merino ewe, the produce will easily bring a dollar a head more than that of any other sire; but in general the size and weight of a lamb goes with the multitude before mere quality, this qualification being most popular with the fewest purchasers. And yet for love of this beautiful sheep the writer would make this sacrifice, and commend this disposition in his readers. Its wool furnishes the best material for the finest blankets and the softest clothing material; its flesh is the sweetest mutton, but it requires, as all other excellent things do, the very best material for the making of it. It delights in a short, thick, blue-grass pasture, and is by no means a coarse feeder. A well fed two-year-old will make eighteen pounds to the quarter, but the light weight is compensated for somewhat by the finer lighter bone. Two thirds of its live weight of salable meat of the best quality is the ordinary product of a sheep of this breed. It will not do well on coarse keeping, and thus is not the right sheep

for a careless farmer. But in the right place, it will well repay the keeper for all his care. As an improver of every other breed, and as a refining influence, it has a special value for the most intelligent and enterprising shepherds.

THE MERINO.

By far the most numerous breed of sheep now in existence is the Merino. It is the most numerous in our own country, while in some other countries it is practically the only breed kept. This is due to the value of the wool, which is the staple clothing wool of the world. But of late sub breeds of this valuable sheep have been produced, which have generally improved the race, and have made some kinds of these as valuable for mutton as any of the so called mutton sheep. The only objection made to the meat of these sheep is the "sheepy" flavor of the meat, as much in



RAMBOUILLET.—The great ram in the German Empire in 1902, now owned by Beaver Stock Farm, North Dakota.

the same way we call the flesh of the goat strong in a peculiar flavor. The special flavor of the meat is really an advantage, as when once used to eat mutton this peculiarity of the flesh becomes decidedly agreeable. But, actually, as the common sheep kept is more of a Merino than anything else, and this is the staple supply of the markets at the present, and has always been in the past, the Merino of any of the varieties is equally as excellent for mutton as any other kind of sheep. This breed of sheep is most remarkable for the large quantity of yolk and oil in the fleece, and as this is secreted by the skin, of course there is at all times more or less of it in the pores of the skin, but it is by no means necessary that the flesh should be tainted in the least by this special odor of the sheep than that the flesh of the hog should be so affected by the special odor of that animal. Indeed, the woolly flavor of the home dressed mutton is simply due to mistake in dressing the carcass. It does not come from the skin, but from the interior of the ani-

mal, and if the carcass of a sheep is emptied of its contents quickly, and the removal of the skin is left until the interior of the animal is freed from its contents, from which this special odor is derived, the mutton is then free from any odor whatever, and is as sweet as the meat of a young lamb.

Thus the various sub-breeds, as they may be called, of the Merino may be as valuable for mutton, in spite of the oiliness and the yolk of the fleece, as any other kind of sheep; and even with the little care taken in dressing a sheep, and by skilful cooking, the mutton of a Merino of any kind may be really as good and well flavored as that of a Southdown.

The best of the Merinos is the French or Rambouillet; an exceedingly valuable sheep and a very great improvement on the small old-fashioned Merinos, as much so as the big Shorthorn cattle are on the common scrubs. This class of sheep, however, is kept mostly for fleece, which consists of the finest kind of wool used for the most costly kinds of clothing; and the enormous quantity of wool of this most valuable kind borne by this sheep gives it a special value for the farmer's flock. It is exceedingly hardy, and makes quite as much of the best meat as the favorite Southdown; the only difference being one cent a pound in the value of the legs alone, all other parts bringing in the market as high prices as the best of all other breeds. It is the form of the animal by which its value to the butcher is made; and while the Merino is a little deficient in its finished weight altogether, yet, in regard to the Southdown, the Merino exceeds it in the value of the ribs and loins, parts which we all know go to make up the most value of a meat carcass.

For crossing on the common native sheep, there is no question of the excess in value of the Rambouillet Merino, commonly called the French Merino, and this variety is to be commended and recommended for the use of the farm, both for its most valuable fleece as to quantity and the market price of it, and next only to the best of all other breeds for its mutton.

We wish to say a few words in regard to the value of the flock as improvers of the soil. The sheep's foot is golden, is a very ancient proverb, and its history from the most ancient time to the present proves the truth of the adage. The sheep lives well on the surplus of the farm, which for want of it will go to waste. It returns in the manure more value from its food than any other animal. It gives to its feeder three profits—its fleece, its growth, and its lamb. It is the gleaner of the wastes otherwise lost. It makes more profit, too, in its early maturity for market, and its lambs, costing actually only a few cents, when two or three months old, bring over twice as much as any two year old sheep will. Quick returns make big profits, and

there is no quicker profit in anything made than in a three-months old lamb, which sells for twice as much as its dam will. Everywhere, the best farming is accompanied by, and really is a result of, a well-kept flock.

Macon Co., N. C.

HENRY STEWART.

DEVON CATTLE.

Editor Southern Planter:

These cattle, with reference to whom Youatt said "The very best are the best in the world," have many staunch admirers, and without a mention of them even a holiday number of the *Planter* would be shorn of an attraction in the eyes of lovers of the somewhat small but perfect type of North Devon. The old type of North Devon has been studied and most carefully conserved in its original habitat, and most of the stock in the United States traces not only to the best recorded ancestry, but to the best reputed herds in existence long prior to registration, and its impression is necessary for character and quality in Devon herds grazed on richer land and more liberally fed, which naturally develop larger and heavier frames in course of time. The writer has been a Devon breeder for over twenty years, and finds these hardy red cattle well adapted to his surroundings, which are not good enough for Shorthorns and Herefords. The Devon thrives well on short grass, quickly responds to any extra feed, and when fat weighs uncommonly well. His ability to stamp his good qualities of shape, thriftiness, color and docility on any breed of any color he may be mated with makes him a most valuable animal to the stock-grower on moderately fertile land. As a dairy animal, the Devon can hold its own, and for the production of oxen for the yoke stands pre-eminent for strength, quickness and powers of endurance. In my experience the only weak point in the Devon is that he does not mature until three or four years old; indeed, I have known oxen fed at seven years old make considerable growth up to that time. In these days of "baby beef" and early maturity this is quite a drawback. If the Devon was as precocious as the Angus or Gallo-way he would easily be monarch of all he surveys, and no other beef animal would be grazed or fed.

The Eastern States have from early days carried the biggest proportion of Devon cattle, but now there are many fine herds to be found in the South and Southwest.

I can hardly close without referring to Dr. Morris, of Chester county, Pa., who has done the State, and the Devon interest particularly, some service by importing those rare good bulls "Tanrus" and "Duke of Molland," who, I believe, trace back through the "Famous" family to "Long-horned Curly," the most valuable of all Devon foundation pedigrees.

Orange Co., Va.

R. J. F.



BERKSHIRE.—IMPORTED HIGHCLERE TOPPER 51934.

THE BROOD SOW.

Editor Southern Planter :

Since a good brood sow is a *sine qua non* for successful hog raising, I do not know of any section of this industry that should be of more general interest. I will commence with a few chief requirements which go to make a sow profitable to the raiser of fat pigs for the market. First of all, these are, roughly, size or development, combined with good formation and a certain matronly appearance that is hard to describe, a rangy roomy sow without being loose or leggy and that promises to make a good milker. Not coarse in the shoulder, but with all the depth of sides possible, and good deep and wide hams, and strong, straight, and even slightly arched back as indicating good condition and vigor; ample heart and lung room, and at least twelve teats of even size, should all be looked for. I say of even size, for occasionally a sow will have some of the teats blind, and this is, of course, a serious defect, and one which is certainly hereditary. The number of pigs which a sow will have in a litter is also largely hereditary, some females being much more prolific than others. For this reason, sow pigs which are to be kept for breeding from should be selected out of large and even litters.

As a general thing, insufficient attention is given to the fact that sows will vary largely in the amount of milk they produce, almost as much as cows, and there is, therefore, a correspondingly quicker or slower growth of the pigs. I will not go so far as to say one ought to look for dairy type in a brood sow, but it comes very near to this. There is a certain type of short coupled and necked and heavy shouldered naturally rounded all over sow that in nine cases out of ten will not make a first-class milker, and it is unfortunately a fact that the show sow, which cannot be beaten in the ring, is not always the producer of the most thrifty litter unless she is prepared and fed with great care for a long time beforehand, and even then it is very uncertain.

Disposition is another hereditary trait. An excitable, ill-tempered beast is not worth fooling with, as the odds are in favor of her get being the same way,

and she will certainly give undue trouble to the attendants during and just after farrowing. As this article is more in the interest of the production of pork on a small scale than breeding thoroughbred animals, I will say nothing about such points as good feet, formation of head and ears, setting on of tail, etc., all of which are not necessary in this case and less important than the above. However, there are none of these except color, placing and shape of ears and setting on of tail but what are founded upon practical requirements, and every owner of a few pigs can certainly lose nothing by studying over the score cards of the different breeds and trying to figure out the reason for the division of points.

As to the sow's breed, she is, I hope, a grade and not a scrub. One cross, at least, or two crosses, by a thoroughbred boar of some of improved breeds upon a razor-back hog, will work wonders both in early maturity, increased value of sides and hams, and quick fattening at very little cost. I am, myself, naturally in favor of the Berkshire grade. They are certainly good grazers, average well for the number in litter, and the blood is so very prepotent owing to the length of time during which Berkshires have been bred pure that one cross will do a great deal, I think more than any other breed when used on the scrub or razor-back. The Tamworth just now has been creating some attraction, but the breed is only about one-third the age of the Berkshires; moreover, the sweepstakes at the Birmingham Fat Stock Show (a strong place for the consideration of fancy bacon and ham points), was this year won by the Berkshire, and the sweepstakes for the car load of fat hogs at the Great International at Chicago this year was also won by the Berkshire. So, apparently, both sides of the "pond" have come to the same conclusion.

The tendency and the greatest profit for the last few years has been for marketing young pigs, especially since so many have realized that it costs far less grain and time to make a pound of pork in a young pig that is under one year old than it does afterwards. In other words, the first two hundred pounds is the cheapest. After that, every pound that is added increases in cost. Moreover, these young pigs of medium weight bring the highest prices in the market. The farmer, therefore, must breed his sows to satisfy the economy of his farm. If they are bred to come in the first of the year, and I think in the Southern climate this is the best time, they are then fat and ready to kill in November or December, and by this means the greater part of the fattening process can come on during warm weather at a time of the year when the greatest number of pounds can be secured from a bushel of corn, and when this yield can be still more increased by feeding it in connection with suitable

pastures. If sows are to farrow any time before April, farrowing pens must be provided. These, however, can be of very cheap construction so long as they can be kept clean and dry, and, above all, are open to the south. I would rather have a litter of pigs under a pine brush roof, so long as it is water tight and open to the south, than have to winter them in the best possible building that was located as I have seen many. There is hardly an animal more subject to rheumatism and other ills if they are raised in cold, damp buildings than is a pig during its early days.

The feeding of the sow before and after farrowing would take more to go into than my entire space would allow. The main point is to let them come in in good condition, but not fat, and not feed on heating foods and not to start the milk with warm slops until all the inflammation, or danger of inflammation, is over, as a good milking sow, like a cow, is much more apt to suffer from caked teats than the poor sow.

There are quite a variety of feeds that can be drawn upon for succulent feed in winter. The Irish potato (I have had no experience with sweet but they are very favorably reported upon) is the favorite. Potato raisers can use their small and cull potatoes very profitably and easily. Probably the quickest way to prepare them is to steam them by cooking in a large iron boiler that can be tightly covered, with two or three gallons of water only in the bottom. A small fire will soon boil the water and after a time the steam will bring the whole mass to such a heat that it only requires to be left covered up to complete the process. The excess of water, however, should be poured off before mashing the potatoes, as it is supposed to extract the poisonous substance from the potato skins, but I have never cared to make the experiment as to whether it is so or not. Mangels, another root that is both cheap and serviceable for furnishing a suckling feed during the winter (although English breeders object to feeding them to sows soon due to farrow, but we have fed them off and on here and never noticed the slightest injurious effect). Pumpkins are another most valuable suckling feed, but are not raised in the South as much as they should be. Among the grains, the standard is a mixture of bran and shorts, but it is frequently economical to use instead of the bran Brewers' Grains when the market price makes this the cheapest feed. However much corn on hand this should be reserved for the fattening process and the mixture of bran and shorts fed as a slop to the brood sow and her young litter. If the lucky breeder can add skim milk he will then push them along with the greatest possible rapidity. In lieu of this there are very favorable reports upon the use of dried blood.

At the present market price of pork it certainly pays to go to the trouble and expense of giving a little

extra attention and feed to the sow and her young litter. The proposition, of course, is a very different one, if she farrows later on and can be turned out on clover and alfalfa fields or an old meadow. There are some most valuable experiments as to the value of growing good red clover or alfalfa when marketed in the way of pork. There is certainly no cheaper way of growing a pig, and with the present markets there is no reason why every farmer, however small, should not have a certain area in one of these crops which he can market through his pigs.

For a late fall and winter run for hogs many feeders have found it pays well to put in special crops, allowing the hogs to gather them, and feeding at the same time their corn or other fattening ration in connection. Sweet potatoes, chufas and artichokes lead the list in popularity. A woodland run is of great benefit during the late winter months, as a hog doubtless enjoys rooting and certainly picks up a little varied diet which does much towards keeping the digestive organs in tone. I think that one of the commonest faults in fattening hogs for the market is insufficient varying of the feed, often confining it to the staple article corn.

Finally, it is a mistake to breed from immature animals. A sow is hardly in condition to take care of a litter before she is a year old, and a boar should not be used for service under nine months. While a sow can be made to bring three litters a year, it is difficult and certainly not profitable. Two litters in one year is all that should be asked from her if pigs that will grow off quickly and with plenty of vigor are desired. The diseases met with are not many and are caused chiefly by bad feeding, dusty and dirty quarters, and are chiefly met with in the shape of colds, bowel complaints and the parasitic worms with which many litters are infected and which attack the young litters very early, lodging in the bronchial tubes and lungs.

Hog cholera, the most dreaded of all diseases and certainly the most contagious, has, in the end, been a good thing for the breeders of thoroughbred hogs; as, whilst many herds are almost wiped out of existence the market is increased for the others; but this is even worse as there is no indirect profit in the case of the man raising pigs for pork. Careful quarantining of all animals that have come in from outside on some outstanding farm, or as far away from where the permanent pigs are kept, is the only way to keep this out of the herd, and even with every care it will sometimes break out. I am glad to say that I have had most favorable reports of an anti-toxin treatment which is certainly the most rational and the first preventive that recommends itself as based upon sound principles.

Buncombe Co., N. C.

G. F. W.

The Poultry Yard.

FEEDING EXPERIMENTS.

At the West Virginia Experiment Station, a series of experiments has been conducted with different foods as sources of protein so essential for laying hens, and also with ground grain as compared with whole grain and mash fed in the morning and at night for laying hens.

In the first series of experiments, high-grade beef scraps were obtained from one of the packing houses in Chicago. Milk albumen was supplied by a company which manufactures milk sugar. Fresh meat and bone was obtained from a local butcher and ground as required.

Three pens of fowls were employed in the test, each pen containing ten White Leghorn pullets, ten two-year-old hens, and two roosters. They were fed the same grain ration, and in addition during the first period pen 1 received beef scraps, pen 2 milk albumen, and pen 3 ground fresh meat and bone, while during the second period pen 1 received fresh bone, pen 2 beef scraps, and pen 3 milk albumen. During the experiment an attempt was made to feed as nearly as possible the same amount of protein to each pen.

At no time during the test were the fowls fed heavily for egg production, as many of the eggs were used for hatching. This was especially true during the second period, when, in order to secure fertile eggs, very little mash was fed.

The fowls were confined in the houses. One of the runs belonging to each house had been sown to rye in the fall of 1901, and the other runs were sown to oats in the spring, thus providing an abundance of shade and green food. Water, mica-crystal grit and granulated bone were supplied *ad libitum*, and the whole grain which was fed was scattered in the litter in the scratching room. The experiment began November 1, 1901, and was divided into two periods of 120 days each.

In this experiment, more eggs were laid by the fowls when fed beef scraps than when they received either ground fresh meat and bone or milk albumen. The health of the fowls remained uniformly good throughout the test, and the low egg yield was due partly to the fact that the houses in which the fowls were kept were not constructed warm enough for economical egg production during the winter, and partially to the fact that the fowls were not fed heavily at any time for egg production, as many of the eggs were incubated, and strong, vigorous chicks were desired.

In experiments made at other Stations, having the same objects in view, the general results obtained point to the conclusion that the dried and ground material, when pure and untauted, is equally as valuable as the ground fresh meat and bone. The beef scraps, further, possess the advantage that a supply sufficient for several months can be obtained at one time, while with fresh meat and bone there is always considerable trouble and expense connected with obtaining the supply regularly and grinding it.

In the second of the experiments conducted at the West Virginia Station, comparing ground grain with whole grain and mash when fed in the morning and at night, the object was to arrive, if possible, at some

definite conclusion on a point upon which there is much diversity of opinion.

On most poultry farms, it is the custom to feed to laying hens in the morning a mash in which corn meal, ground oats, wheat bran, steamed clover, beef scraps, or other feeding stuff are incorporated in various proportions. Toward evening, whole grain is usually scattered in the litter, and the fowls are thus obliged to scratch vigorously for their evening meal. On the other hand, some poultrymen strongly advocate the practice of feeding the whole grain in the morning and the mash at night, claiming that by so doing the hens are kept busy during the entire day, and that they consequently take more exercise, resulting in an increase in the egg production.

The experiment was begun April 23, 1901, and was divided into two periods of sixty days each. Five pens of fowls were employed. Each of pens 1, 2 and 3 consisted of twenty White Leghorn hens and two cocks, nearly one year old at the beginning of the experiment. Pens 4 and 5 contained the same number of White Leghorn hens and cocks about four years old.

The grain ration consisted of corn and oats, ground and unground. Beef scraps were fed dry to those fowls which received the whole grain ration, and in the other cases it was mixed with the mash, which was made by moistening the ground feed and scraps with water at the ordinary temperature. At the beginning of each period the food for each pen was weighed out in bulk and stored in boxes in the scratching sheds. The fowls were fed liberally, and each lot was fed as nearly the same amount of food at each meal as could be done by measure. At the end of each period the food remaining in the boxes was weighed, and thus the total amount of food consumed was determined.

The fowls were supplied at all times with granulated bone, mica crystal grit and water, and each flock was allowed the use of two runs, one of which had been seeded to rye, furnishing shade, and the other sown to oats, thus providing a liberal supply of green feed.

CONCLUSIONS.

1. In this experiment the egg production was practically the same when the mash was fed in the morning as when fed at night.

2. With both young and old fowls better results were obtained when about one third of the grain ration was fed ground and moistened than when all of the grain was fed whole and scattered in the litter.

3. During the test the average food cost of the eggs laid by the young fowls was 5.8 cents per dozen, while with the other hens the cost was 6.4 cents. In this connection it should be remembered, however, that these fowls had a very restricted range, and that all of the food that they received was charged to them at full market rates. On the other hand, on the ordinary farm, where the fowls have unrestricted range, much of their food consists of bugs and worms and grain which is scattered here and there and which otherwise would go to waste. Under these better conditions, the real cost of the food would only be a fraction of that stated above.

The Horse.

HACKNEYS STILL IN DEMAND.

A well-known Virginia breeder of Hackneys writes us that he recently sold a three-year-old colt for \$10,000. Hackneys and Hackney crosses on Virginia-bred mares having a good dash of thoroughbred blood are always wanted at paying prices. They should be bred out of good-sized mares to give them size and weight enough to handle the heavier carriages now in use.—ED.

NOTES.

At the Acca Farm track, W. L. Bass is wintering some fifteen head of trotters and pacers, all of whom are doing quite nicely. Those with records are Joyful Maiden, 2:19½, pacing bay mare, by King Nutwood, dam by Petoskey; Fern, 2:21½, pacing bay mare, by Petoskey, dam Mannie, by Ajax, Red Light, 2:21½, chestnut mare, by Red Wilkes, Jr., dam Moonlight, by Twilight; Eliza Ingram, 2:21½, chestnut mare, by John R. Gentry, 2:00½, dam Blondette, dam of Governor Holt, 2:15, by Leland; and Marie, 2:30½, bay mare, by Jolly Friar, dam Parker Holland, by Sam Purdy, while those that have no marks are Medinwood, full sister to Firewood, 2:17½, by King Nutwood, dam Medina, by Middletown; Maxie K., bay horse, by McZeus, dam Miss Bird, by Young Jim, a bay filly, by McZeus, dam Louise, sister to Branchwood, 2:22½, by Woodburn Hambletonian, and a couple of good looking bays, one a gelding, 5, and the other a mare, 6, both of whom were sired by Omar Pasha, full brother to Mosul, 2:09½, and are owned by Congressman Rixey, of Culpeper. The foregoing list, however, does not include a nice-looking bay colt, foaled 1891 and sired by a son of Red Wilkes, recently purchased by Bass from James A. Graham, who owned the dam, the great brood mare Remembrance, the daughter of George Wilkes that produced El Baneia, 2:17½; Virginia Jim, 2:12½, etc. This colt is good gaited, and acts as if he would go fast and increase the list of performers and producers to the credit of his dam.

Mr. S. F. Chapman, of Gordonsville, will stand for public service, during the season of 1903, the large, handsome bay stallion Wealth, 2:37½, by Gambetta Wilkes, dam Magnolia, by Norfolk, the sire of Miss Nelson, 2:11½. Breeders and owners of desirable mares in that vicinity who wish to mate them with a richly bred and fast trotting bred stallion can make no mistake in patronizing Wealth. Gambetta Wilkes is one of the finest looking and most successful sons of the immortal George Wilkes. As a sire of new standard performers, he leads all others, having seventeen of his get enter the list, among them being Wealth; whose record of 2:17½ does not indicate his speed limit by long odds, as he was timed separately in a race in 2:08. Wealth will stand for service during 1903, at the very moderate sum of \$20 the season with return privilege, or \$25 to insure.

At the recent Fasig Tipton Company's big New York sale of trotters and pacers, J. L. Justis, Parkesley, Va., secured a well bred three year-old in the bay filly Miss Penn, 2:29, by William Penn, 2:07½, dam Sister Willing, by Willing, son of Wilton. She fell to his bid of \$230. D. S. Jones, of Newport News, was also on hand, and paid \$300 for the bay yearling filly, by Oakland Baron, 2:09½, dam Minnie P., 2:10½, by Earnest, son of Volunteer. Oakland Baron got the famous blind trotter Rhythmic, 2:08, and this filly is entered in the Hartford Futurity, \$10,000. At the same sale the Eastern Shore of Virginia breeders, the Floyd Brothers, of Bridgetown, secured a likely prospect for speed and race horse quality in the Texas-bred colt, Red Oliver, foaled 1901, by Electrite, 2:28½, out of the great brood mare, Lady May, dam of six in the list, by Port Leonard. Red Oliver is a full brother to the fast trotter Blondie, 2:13½, and is well engaged in stakes, among them the Hartford and Kentucky Futurities. This colt was purchased to place in the Stud, and his speed will be developed by the Messrs. Floyd, who look for him to make a sire of note.

In the bay stallion Great Stakes, 2:20, by Billy Thornhill, dam Sweepstakes, by Sweepstakes, W. H. Nelson, 1416 E. Franklin street, Richmond, Va., offers for service a trotting sire of tested capacity as a sire of speed. He was a trotter himself and good race-horse along with it, while in the Stud he has gotten good performers like Captain, 2:16½, pacing; Foxhall, 2:19½; W. H. N., 2:23½, and others able to get out and win money. For several years Great Stakes headed the Foxhall Stud, Norfolk, Va., where a number of his get are still owned and thought highly of. Great Stakes will stand for mares during 1903 at a service fee of \$25 the season.

In the Christmas issue of "The Horseman," which is attractive in design and full of interesting reading matter, is a cut of the twin stables of E. E. Smathers and the former Richmonder, A. B. Gwathmey. The buildings and land cost these gentlemen over \$100,000, while the trotters and pacers kept for road driving represent a tidy sum as well. Among the horses owned by Mr. Smathers is the famous Lord Derby, 2:05½. Mr. Gwathmey has among others Tiverton, 2:12½; Tudor Chimes, 2:13, and Senator Mills, 2:29½, a son of Electrite, bred in Texas. The Senator has trotted quarters in 30 seconds—a two minute gait—and will be driven on the Harlem River Speedway.

The services of the Hackney stallion Heldrick, by Imp. Danegelt, dam Imp. Heroine, are offered breeders during 1903 at the moderate sum of \$10 the season, or \$15 to insure, by Messrs. C. J. and Joseph Button, Laurel Hill Farm, Walker's, Ford, Va. This horse is a nice bay in color, sixteen hands high, and richly bred, while he has great natural action and should sire grand looking harness horses. He has a nice disposition with an even temper, and these, along with soundness and fine size, are transmitted to the foals sired by him.

The Orange Horseman's Association, whose annual Horse Shows are held at Orange, Va., met there recently and elected officers. The success of the Association since its organization has been remarkable, as after paying for improvements to their new grounds a nice balance remains in the treasury, and the outlook for the season of 1903 is of a most encouraging nature. Good men are at the helm, and the affairs of the Association have been wisely managed from the beginning. The following gentlemen were elected officers: President, W. W. Sanford; Vice-Presidents, William Dupont, R. C. Booten, W. G. Crenshaw, Jr.; Secretary and Treasurer, L. S. Ricketts; Directors, C. C. Taliaferro, F. B. Perry, H. A. Willis, J. T. Lightfoot, William C. Williams, H. D. Holladay, Jr., J. W. McComb and L. S. Ricketts.

Mr. W. W. Sanford, the new president of the Orange Horseman's Association, is well calculated to fill the position, as, aside from his business qualifications, he is an able Judge of form, and as the proprietor of Woodley Stock Farm, Orange, Virginia, he is widely known as an owner, breeder and exhibitor of hunters, jumpers and harness horses.

Mr. Harry Hogshead, a well-known druggist and breeder, Staunton, Va., is wintering his trotters near there, and reports them in good shape. He has the large, handsome and well bred stallion Prince Redwood, trial, trotting, 2:16½, by Prince Eugene, 2:21½, out of the great brood mare Speedy Fanny, dam of Sady M., 2:13½, etc., by Black's Hambletonian, and the brood mares Fanny Keystone, by Keystone, and Psychine, formerly known as Hilpa, by Wilkes Boy. The latter dropped a nice colt this year by Howson, son of Red Leo, and was bred to Prince Redwood, as was Fanny Keystone.

The well known North Carolina horseman, George M. Harden, of Raleigh, is wintering his stable of trotters there, and among them is the young stallion Sweet Rector, by Director, 2:17½, dam Sweet Alca, by Alcazar; also the fast chestnut mare Petronel, 2:19½, by Expedition, 2:15½, dam Petronel, by Onward. The latter made her record at Savannah this fall. She has shown a trial in 2:14½, going the latter half in 1:05½. The brown gelding Rubico, 2:23½, by Pamlico, for several seasons a good bred winner of the Harden stable, has been exchanged with T. M. Arrasmith, of Greensboro, for the Tennessee bred pacer John T. Moore, a bay colt, foaled 1899, by Hal Wooldridge, dam by Locomotive, second dam by John Dillard. Mr. Harden also owns the good brood mare Burtie Wilkes, by Red Wilkes, dam Burtie Amos, by Blue Bull, and her foal of 1902, a bay filly by Sweet Rector.

The black gelding General Johnson, by Lynne Bel, dam Miss Mack, by Fairlawn, son of Nutwood, bred and formerly owned by Mr. Charles Sharp, Norfolk, Va., was one of the thousand and odd horses that passed through the Fasig-Tipton Company's "Old Glory Sale" in New York, and John McGuire got a bargain in him at \$700. The black son of Lynne Bel was consigned by W. L. James, of Baltimore, who has raced him for two seasons past and drove him to a record of 2:12½.

C. A. Pusey, the veteran trainer and driver, who in the eighties won in grand circuit company with the Blue Bull mare Lona Giffin, 2:23½, and who during more recent years scored victories with Mosul; Bustler, 2:15½; Little Betz, 2:23½, and others, is now jogging a stable of well bred youngsters and a few older horses for S. P. Clay, the well known railroad contractor, whose place is out on Church Hill. Mr. Clay has recently purchased some good prospects by successful sires of speed, and Pusey hopes to get a few of them at least ready for the races another season.

Algernon Daingerfield has sold to John E. Madden, Lexington, Ky., the chestnut mare Lady Scarlet, foaled 1896, by Strathmore, dam Pappoose, sister to Parole, by imported Mirthful, dam of Aceful. Mr. Daingerfield has recently sustained quite a loss in the death, which occurred in Virginia, of the bay filly All Saints, 4, by St. Saviour, dam imported St. Cypria, by imported St. Gatien. The former Virginian, Algernon Daingerfield, now assistant secretary of the Washington Jockey Club, and who divides his time between Washington and Lexington, Ky., was married on December 7th to Miss Margaret Duncan, daughter of Mayor Henry T. Duncan, of Lexington.

Mr. Robert Neville, Welbourne, Va., has recently purchased and added to his stud, the black horse Black Dick, foaled 1898, by Sir Dixon, dam Merdin, by Hindoo. The horse was purchased at public auction, and \$1,550 was the price paid.

W. C. Daly has sold to C. Mack the Virginia-bred gelding Alsike, a bay, foaled 1896, by Flatlands, dam Lucky Clover, by Bersan. Alsike is a product of the Fort Chiswell Stud of J. H. McGavock, Max Meadows. BROAD ROCK.

SEEDING GRASS.

Editor Southern Planter:

A method of seeding grass seed adopted by a few farmers in my neighborhood, may interest many of your readers who fail in getting a stand of grass.

The quantity of seed for an acre (and it should be liberal), is thoroughly mixed with a quantity of fertilizer required for the same amount of land. It is then bagged and taken to the field and placed in the drill to be delivered with the wheat or oat crop or by itself, as the case may be. Two advantages are gained by this method. The grass seed, whether orchard grass, clover, timothy, or other, comes in direct contact with the fertilizer, and it is put deep enough to come in contact with moisture without dying for lack of it, as it frequently does when placed near the surface.

W. G. M.

Albemarle Co., Va.

Mention the *Planter* to your friends.

Miscellaneous.

FENCE LAWS IN VIRGINIA.

We are glad to notice that a member of the House of Delegates of Virginia (Mr. D. H. Leake) has introduced a bill having for its object the changing of the present law as to fences in this State. At present, an owner of land in Virginia must fence *out* his neighbor's stock if he desires to have full and peaceful enjoyment of that property which he has bought and paid for. If the bill becomes a law, as we most heartily hope that it will, this obnoxious and unjust position will be at an end, and each owner of land must fence *in* his stock and keep it from trespassing on any other man's property. This object we sought to accomplish in the suit which was carried to the Court of Appeals two or three years ago, in which it was contended that the present system was unconstitutional. The Court decided against this view in a judgment which we have always regarded as a most shallow one reached by arguments which could not stand the test of careful consideration and based much more on sentiment than reason. The patron of the bill has promised to send us a copy of it as soon as printed, when we will publish the same. Meanwhile, we would ask farmers everywhere in the State who desire to have the peaceful and full enjoyment of their own property to write their representatives in the Senate and House asking them to support Mr. Leake's bill and assist its passage in every way possible. Until such a law is passed, we can never make that progress in live stock husbandry which means so much to the State.

IRRIGATION.

Editor Southern Planter :

Accepting your invitation contained in the last issue of your valuable journal, to say something on the subject indicated above, I would say to "*Greenhorn,*" "Be not discouraged at the ridicule your ideas in this regard may excite among your neighbors. I am a native Virginian myself, as were my fathers for seven generations before me, and know how hard it is for them to see any better way of farming than the methods pursued by their fathers before them. Take heart; you may be in error as to details, but you are on the right track."

There was in my father's library an old geography, written by a man named *Morse*, and published about the year 1810, in which, in alluding to the climate of Virginia, the writer stated that the greatest drawback to agriculture in the State was the fact that, as a rule, drought cut short the crops. That this is true is beyond question, notwithstanding the abundance of rain

in the State during the last two years. When crops fail, such failure cannot be charged to the soil or to other climatic conditions; but may be generally traced to the lack of moisture at some period of their growth. The past summer and autumn have been exceptionally wet and seasonable, and the result is that, in my section of country, no such abundant crops have been seen for years. That irrigation would, where the conditions are such as to enable the farmer to practice it properly, be of vast benefit here, cannot be doubted. If irrigation pays in the arid parts of the West, as a matter of course it would pay *here when moisture is needed* by the crops. It is practiced in the State of Utah, because no rain is expected. It is not practiced, as a rule, here, because, no matter how dreadful the drought, the farmer hopes and prays for "the early and the latter rains." But if he was prepared to irrigate his arid fields, and the rains did come so as to render his artificial means of supplying water unnecessary, he would be as well or better off than the man who depends entirely upon irrigation.

Now for seven years I have practiced irrigation upon a very small scale, not as an experiment, but because I have found by experience that it was one of the most interesting, satisfactory and paying institutions within my reach.

In 1895 I formed a garden on a meadow, through which ran a never failing brook. It was a flat piece of land in the shape of a parallelogram, about one hundred yards long from east to west and about seventy yards wide. The brook approaches it from the west, the fall being east. On the south side a ditch conducts the stream along the side of the garden, and a dike on the south and west sides protect it from high water in time of freshets. It is also ditched on the other two sides, and thoroughly underdrained. The rows of vegetables run lengthways—from west to east—the direction of the fall, and the cultivation is mainly done by horses, the rows being about one hundred yards long. When irrigation is needed, by a simple and inexpensive contrivance, water is brought to the upper end, and run down the rows of the vegetables to which it is desirable to apply it until the ground is sufficiently soaked, when it is shut off—the surplus water escaping into the eastern ditch. The result has been a wealth of vegetation I have never seen elsewhere; and by this method I have succeeded in doing what I could never do before—namely, raise enormous crops of celery and late cabbage, and have English peas and spinach during the entire summer. Even last summer there were occasions when I resorted to irrigation with excellent results—e. g., when I planted celery, late beans, etc.

In dry seasons, when neighboring gardens were parched and dry, this one revelled in luxuriant verdure.

That irrigation would be far more successful when applied to grass lands in Virginia cannot be doubted. *Goochland Co., Va.*

M., OF NORTHSIDE.

IRRIGATION PROBLEMS IN VIRGINIA.

Editor Southern Planter :

The article in the December number of your journal, entitled "Irrigation Problems in Virginia," deals with a question which this office has been studying for several years, and it may be that our experience will be of some service in helping to answer the inquiry of your correspondent.

Speaking broadly, the investigation of this office to determine the value of irrigation in the humid portions of the United States has shown that there are few sections where, at some time during the growing season, the ability to apply water, if for a brief period only, would not secure largely increased yields; but no general answer can be returned as to whether or not this kind of irrigation will pay. It depends in part upon the outlay required to provide a water supply, the character of the water, the soil to which it is applied, and the kinds of crops grown. The best results thus far secured have come from the irrigation of crops having a high acreage value. Irrigation of small fruits has almost always proven profitable. The irrigation of rice in Louisiana and Texas and enormously advanced land values and transformed the industrial conditions of a large portion of the Gulf Coast. Prof. Waters, of the State Agricultural Experiment Station of Missouri, believes that in that State an outlay of \$200 an acre can be profitably made for the purpose of irrigating nursery stock. Ability to irrigate young trees during the midsummer drouth of that State enables them to be marketed a year sooner than would otherwise be possible, and makes them larger and of better form, so that they command a higher price.

The irrigation of small fruits has proven generally profitable in New Jersey, and the market gardeners around Boston are nearly all equipped with facilities for irrigating their more valuable crops.

The invention of the gasoline engine and the improvements made in pumping machinery are making it possible to supply water for small tracts at a less outlay and with greater assurance of success than was possible ten years ago. Hence, the number of irrigators east of the Mississippi river is rapidly increasing. The greatest progress which is being made is in the South, and it is here that the conditions promise the most satisfactory results. During the past year this office furnished advice, and in some cases prepared

plans for installing a considerable number of pumping plants by farmers, and there are a number of requests on file for assistance of this kind in the spring of 1903.

The following extract from the report of an irrigation plant, installed last summer, may be of interest to your inquirer and others. This report was furnished by Mr. Hamilton Yancey, of Rome, Georgia, who is pumping water from the Coosa river for about 400 acres of land. This pump is driven by a 35 horse-power engine, lifts water 30 feet, and has a capacity of 2,000 gallons per minute. It was not completed until July 25. The season was unusually dry, and on July 25 a field of corn planted in June was not over 4 to 8 inches in height, bleached almost white, and apparently dying. On the evening of July 25 and succeeding day this field was irrigated by running water between the rows, a considerable portion of the field, however, being flooded. Without irrigation there could have been no crop. This single irrigation produced a yield of between 50 and 60 bushels to the acre.

Another field of early corn had reached the earing stage when the pump was completed. It was suffering severely for water, the tassels bleached and the corn in twist. Four to six hours after the irrigation, the stalks gave evidence of reviving, and a good crop of corn and heavy yield of fodder were harvested. Other fields near by were cut for forage only, no ears appearing on the stalks.

Mr. Yancey writes as follows about his oat crop:

I may add, for the first time in my planting experience and knowledge, my full oat crop, after reaching a fine growth of straw, failed to make seed from the absolute want of moisture. Had I been prepared to give one good irrigation to this field of oats in the early part of May last, the yield would have practically paid for the installation of my plant.

It is believed that there are few sections in the South where it will not pay farmers or gardeners to provide for the irrigation of from one to ten acres of land. Whether or not it will pay for the general field cultivation of crops can only be determined by the conditions of each particular case. In the case of your correspondent, much will depend on the character of the soil. I question whether irrigation will produce as great an increase in yield on a Virginia farm as on the lands of the arid region. These lands are very rich in the mineral elements of plant life, because the arid climate has prevented their fertility being leached out. All that they need to become enormously productive is water. As a rule, water does not supply the elements which make land productive. It simply makes them available. If the Virginia lands are not fertile to begin with, water alone will not make them so, and I doubt whether the benefits of the silt spoken of will be as great as anticipated.

Another question which would need to be looked into would be the drainage of these lands. If there is good natural drainage, the results will be much more satisfactory than if this is lacking. The amount of water mentioned would be sufficient, and if the soil conditions are favorable, I see no reason why the irrigation of hay land would not both increase the yield and the quality of the product. Meadows are being irrigated in Italy and England at a profit, both countries in which the rainfall is equal in amount and as well distributed as in the South.

Bulletin 119 of this office contains the reports of studies of irrigation in the humid sections for 1901. It can be had on request.

Sincerely yours,

ELWOOD MEAD,

Chief of Irrigation Investigations.

Department of Agriculture, Washington, D. C.

IRRIGATION.

Editor Southern Planter:

In your December issue, your correspondent from Hanover county, under title of "Irrigation Problems in Virginia," states his case in terms identically parallel to my own, even down to the ridicule of my neighbors for entertaining the "foolish notion."

Every season finds some one of my crops cut nearly half in two for want of moisture. This fact keeps the thought alive in my mind, but I still lack the "nerve" to brook all opposition and go ahead and irrigate.

My situation is: The floods and freshets in times past have graded and leveled off over 100 acres of my farm ready for the irrigator. A lift of 20 feet will put the water over the bank, and gravity ditches will carry it all over the land. I can install a plant for pumping the water with link belt elevator giving 600 gallons of water per minute for something like \$200. I have on hand the engine and wood to run it. I estimate that at a cost of 25 cents I can pump one inch of water over one acre of land. If three good floodings will make a crop in the West, where they have little or no rain to help out, it ought to make a crop here. Two inches of water at a flooding would mean six inches for the season, costing \$1.50 per acre.

Heat, light, food and water are the essentials for a full crop. The food and water are in man's power to supply. If the water is deficient, so is the crop, even though the heat, light and food be present. The question is, if \$1.50 per acre will give you six inches of water, is there not a big profit in supplying it?

Let your answer be yea or nay. I am aware that there is a great deal in the "know how" to irrigate; that it takes experience to tell when and how much water to apply. It is along this line that the Eastern irrigator, I fear, will experience his greatest troubles. Let on the light, particularly at this point, as well as on the entire subject.

ANOTHER GREENHORN.

Rockingham Co., Va.

OUR ILLUSTRATIONS.

We had hoped to have illustrated the live stock articles in this issue with pictures of some of the fine stock kept by Southern breeders, many of whom are our subscribers. In response to our appeals for photographs, we received very many pictures, but regret to say that they were uniformly of such a defective character that our engravers could not use them to make plates from. They were almost invariably small pictures taken with Kodak Cameras by amateurs, and it is impossible for satisfactory plates to be made from such work. We were therefore compelled to resort to other outside sources. The pictures showing cattle in three positions have been reproduced from photographs made at the Buffalo Exposition for the Department of Agriculture by one of the best animal photographers in the country. The single column pictures are from photographs or plates made for the owners of the animals, or from plates kindly supplied to us by the Secretaries of the different Breed Associations, to whom our acknowledgments are due and tendered for their courtesy. The pictures of the sheep are from photographs most kindly supplied by the proprietors of the "American Sheep Breeder," Chicago, to whose courtesy and ready response to our appeal for help we desire to tender our warmest thanks. We believe no such perfect pictures of fine stock as appears in this issue have ever before been published in any Southern journal.

THE INTERNATIONAL STOCK SHOW, CHICAGO, 1903.

Since our live stock forms were made up and printed we have received reports of the premiums awarded at the greatest stock show ever held which has just closed at Chicago. We take the following comment on these from the *Breeders' Gazette*:

"It was a 'black year' at the show. The grade Aberdeen-Angus bullock was dominant. Whether in the pavilion, in the pens or in the slaughter test, the color was 'black and all black.' Never has a breed accomplished such sweeping victories at a fat stock show. Two out of three of the breed championships by ages, the grand championship of the show, the grand champion herd and reserve for the herd, fell to the blacks within the building, while in the pens the carload lots made almost as sweeping a victory. On the block it was repeated, as five of the ten prizes for carcasses fell to the 'blackskins,' together with the championship."

The Shorthorns, Herefords, Galloways were close followers of the Angns in quality in the order mentioned, and each breed was represented by remarkable exhibits. The Red Polls also made a good showing.

THE
Southern Planter

PUBLISHED BY
THE SOUTHERN PLANTER PUBLISHING CO'Y,
RICHMOND, VA.

ISSUED ON 1ST OF EACH MONTH.

J. F. JACKSON,
Editor and General Manager.
B. MORGAN SHEPHERD,
BUSINESS MANAGER.

TERMS FOR ADVERTISING.
Rate card furnished on application.

TERMS OF SUBSCRIPTION.

The *Southern Planter* is mailed to subscribers in the United States and Canada at \$3c. per annum; all foreign countries and the City of Richmond, 75c.

Remittances should be made direct to this office, either by Registered Letter or Money Order, which will be at our risk. When made otherwise we cannot be responsible.

Always give the Name of the Post Office to which your paper is sent. Your name cannot be found on our books unless this is done.

Subscribers failing to receive their paper promptly and regularly, will confer a favor by reporting the fact at once.

The Date on your Label shows to what time your subscription is paid.

We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles. Criticism of Articles, Suggestions How to Improve THE PLANTER, Descriptions of New Grains, Roots, or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

No anonymous communications or enquiries will receive attention.

Address— THE SOUTHERN PLANTER,
RICHMOND, VA.

Detail Index to Enquirer's Column.

Utilization of Dead Animals.....	6
Fall and Winter Plowing.....	6
Service of Sow.....	6
Canada Peas.....	6
Grazing Wheat.....	7
A Dark Cow Barn.....	7
Lightening a Clay Soil.....	7
Lame Horse.....	7
Pasture Grasses for Light Land.....	7

A Neat BINDER for your back numbers can be had for 25 cents. Address the Business Office.

PUBLISHER'S NOTES.

To Correspondents.

Notwithstanding the fact that we have largely increased the space which we usually give to communications from correspondents, we are compelled to hold over a number of interesting articles for which we have no space. The matter published will, however, we hope, be found so full of interest and instruction as to compensate for that omitted. In our next issue we will endeavor to find space for the matter held over and for such further communications as may reach us before the 20th of the month. We cannot undertake to publish any communications which do not reach us before the 20th of the month previous to the date of issue.

A Word of Acknowledgment and Thanks.

In sending out the first issue of the 64th volume of *The Planter* we desire to offer our warmest thanks to the farmers of the South for the support they have accorded us during the year just passed. We have added more subscribers to our list than ever before were added in any single year of *The Planter's* long life, and we have received an innumerable number of letters from readers of the journal complimenting us on the work we are doing for the farmers. It would require a volume nearly as large as the year's issue of *The Planter* to publish even a selection from these letters. It is very gratifying to us to receive these commendations, and imparts a stimulus to us to endeavor to do still more for our readers in the year now beginning. We promise that no effort on our part shall be wanting to make *The Planter* still more useful to Southern farmers. We think that this issue will be evidence of this. We believe we are correct in saying that never before has any South-

WOOD'S
GARDEN SEEDS

Do best in the "Sunny South, because they are specially grown and selected with a full knowledge of the conditions and requirements of our section. Twenty-five years experience and practical growing of all the different vegetables, enables us to know the very best, and to offer seeds that will give pleasure, satisfaction and profit to all who plant them.

WOOD'S NEW SEED BOOK FOR 1903

(Ready early in January) is full of good things, and gives the most reliable information about all seeds, both for the farm and garden.

T. W. WOOD & SONS,
Seedsman, - Richmond, Va.



WIRE FENCE

Heavy lateral wires, heavy hard steel stays, coiled spring wire, Sure Grip lock. In strength, appearance, and durability, the Hard Steel cannot be excelled. Write for catalogue and prices. **THE HARD STEEL WIRE FENCE CO.**
Cuyahoga Falls, Ohio.

The Strongest Fence
In existence is our Truss and Cable Wire Board Fence. Six wires in every strand. Costs less, lasts longer, more easily built than any other. Sold direct from factory at wholesale prices. Agents wanted. Sample free.
THE TRUSS & CABLE FENCE CO.,
329 Federal Bldg., Youngstown, Ohio.



ORIGINAL.

We were weaving Page Coiled Wire Fence many years before any other fence company, now in existence, was in business. We are weaving it yet. **PAGE WOODEN WIRE FENCE CO., ADRIAN, MICH.**

LAWN FENCE
Many designs. Cheap on wood. 32 page Catalogue free. Special Prices to Cemeteries and Churches. Address **COILED SPRING FENCE CO.**
Box Q, Winchester, Ind.

DOW FARM FENCE
PRICE AND QUALITY—
WILL PLEASE YOU—
WRITE US NOW.
DOW WIRE WORKS, LOUISVILLE, KY.

FENCE! STRONGEST MADE.
Bull-tight. Sold to the Farmer at Wholesale Prices. Fully Warranted. Catalogue Free.
COILED SPRING FENCE CO.
Box 52 Winchester, Indiana, U. S. A.

HOW'S THIS!

We offer One Hundred Dollars reward for any case of Catarrh that can not be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Prop's, Toledo, O.

We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions, and financially able to carry out any obligation made by their firm.

WERT & TRUAX, Wholesale Druggists, Toledo, O.

WALDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally acting directly upon the blood and mucous surfaces of the system. Price 75c. per bottle. Sold by all druggists. Testimonials free.

Hall's Family Pills are the best.

ern agricultural journal published such a fine series of pictures of live stock as appears in this issue. They are true to the breeds represented, and finely bring out the points emphasized in the articles to which they form pendants. We trust the effect may be to arouse in readers a desire and determination to have better bred live stock, and this will certainly result in greater profit. Although we have so much to be thankful for, yet, like Oliver Twist, we still "ask for more." We want each reader of this issue to see his neighbor or friend, and show him *The Planter*, and tell him of its merits, and secure if possible a new subscriber for us. Ask him to give you 50 cents, and send the same to us with his name and address, and you can rest assured that he will, when he has read *The Planter* a year, thank you for having done him the greatest kindness, whilst we shall feel ourselves under a deep obligation to you.

Read the Advertisements:

In this issue will be found the advertising matter of most of the well-known business houses with whom farmers have need to have dealings. We ask for these advertisements the careful attention of all our readers. We can assure our friends that there is not to our knowledge an advertisement from any house or merchant in this issue with whom

YAGER'S LINIMENT CURES PAIN WHEN NOTHING ELSE WILL.

YAGER'S
CREAM

Applying to RHEUMATIC JOINTS

TRADE MARK

Applying to SPAVIN

CHOROFORM

LINIMENT
FOR
MAN OR BEAST

POPULAR

FOR ITS SOOTHING & EFFECT
QUICK HEALING POWERS.
IN THE TREATMENT OF DISEASES REQUIRING
AN EFFICACIOUS EXTERNAL REMEDY.

BEWARE OF IMITATIONS.

PREPARED ONLY BY
GILBERT BROS. & CO.
SOLE PROPRIETORS
BALTIMORE, M.D.
U.S.A.
REGISTERED U.S. PATENT OFFICE

YOUR DEALER SELLS YAGER'S LINIMENT FOR 25 Cts.

EXACT SIZE OF BOTTLE.
TAKE NO SUBSTITUTE.

any farmer need have any doubt whatsoever as to dealing. We exercise the greatest care at all times in keeping out of our columns the advertisements of all "fakers" and dishonorable firms, and positively refuse to carry any advertisements of an immoral tendency, and we make it part of our duty to see that no one whose advertisement appears in our columns takes any unfair advantage of any of our subscribers. While we cannot guarantee that stock or any other article offered comes up to the full requirements of what such stock or other article should do according to requirements of any standard, yet we can and do require that it should reasonably satisfy such requirements, and if it fails to do so we do not hesitate to publish the facts and expose the advertiser, and will not in future carry his advertisements. We do not intend that any purchaser through our columns shall be imposed upon by any advertiser, and will use every means in our power to prevent this.

FISTULA AND POLL EVIL.

Both Fistula and Poll Evil are far more prevalent throughout the Southern States than in the North, and most forms of treatment that have been recommended have either failed entirely or cured only in occasional cases. A remedy that can be relied upon to cure these diseases is capable of saving hundreds of thousands of dollars annually to Southern horse owners. Fleming Brothers, a firm of chemists located at the largest live stock market in the world, manufacture a line of veterinary remedies that are unique in that they are made to cure the most difficult diseases and blemishes known to veterinary science. One of these remedies is Fleming's Fistula and Poll Evil Cure, which they guarantee to cure any case of either disease, no matter of how long standing. Another is for the cure of Lump Jaw in cattle. Still others cure Bone Spavin, Ringbone, Curb, Splint, Sweeny, etc. A cure for Knee-Sprung in horses is their latest achievement in the veterinary field, and this, like all their other preparations, is backed up by a positive guarantee. Readers of this paper who will write to Fleming Bros., No. 22 Union Stock Yards, Chicago, Ill., stating the kind of a case they have to treat, will receive two instructive booklets free.

When corresponding with advertisers, kindly mention that you saw their advertisement in the *Southern Planter*.

FOUNDED
1802.

GOLD MEDALS:
Paris, 1900. Pan-American 1901.

Thorburn's Seeds

For over a hundred years have been universally recognized as the standard of excellence. They received the GOLD MEDALS (the highest award) both at the Paris Exposition of 1900 and at the Pan-American, 1901.

Our Catalogue

—the 102d successive annual edition—contains a more complete assortment and fuller cultural directions than any other seed annual published. It is beautifully illustrated, not with highly colored exaggerations, but with the finest half-tones from life photographs. It contains 128 large size pages, and in addition 16 full page half-tone plates, and is in every respect and without exception the most complete, most reliable, and most beautiful of American Garden Annuals. We will mail it free on receipt of 10 cents in stamps, which amount may be deducted from your first seed order.

Market Gardeners

are invited to send for our special price-list of high-class vegetable seeds for truckers and large market growers. It contains all sorts of approved merit.

J. M. THORBURN & CO.,
36 Cortlandt Street, NEW YORK.

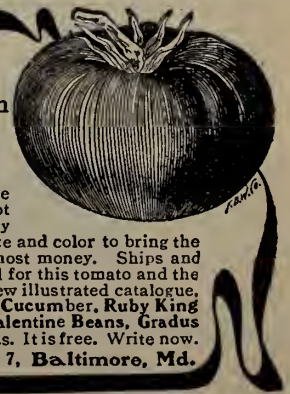


The Tomato

never has been produced that can equal in flavor and fine form our
NEW CENTURY TOMATO.

Bred and trained for years, this tomato is extra large and heavy, hardy, early, free from blight, and will not crack nor scald. Pronounced by growers remarkably solid, full fleshed and free from seed. The right size and color to bring the price on the market, it pleases the eye and brings most money. Ships and keeps unusually well. 800 bus. per acre is the record for this tomato and the seed is all controlled by us. Write to-day for our new illustrated catalogue, showing our New Leader Cabbage, Dark Fortune Cucumber, Ruby King Radish, Rocky Ford Cantaloupe, Alaska Peas, Valentine Beans, Gradus Peas, and all of our big line of garden and field seeds. It is free. Write now.

J. BOLGIANO & SON. Dept. P 7, Baltimore, Md.

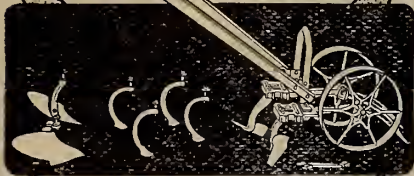


PLANET JR.

It is easy to plant, but something more to properly care for a garden. The amateur gardener, the flower gardener and the market gardener who grow vegetables for profit will each find in this

"Planet Jr." No. 12 Wheel Hoe the best and most efficient garden tool ever offered the public. Cultivates all vegetables astride or between the rows; deep or shallow; kills all weeds; breaks up the top crust after rains; saves the soil moisture, plows, opens furrows, etc.

Adjustable to various width rows. One man can do more work with it and do it easier and better than six men can do with common hoes.

They are so easy to handle that many boys and even girls operate them successfully.

This is but one of the fifty seeding and cultivating implements which we make. The list includes plain and combined Seed Sowers, Wheel Hoes, Hand Cultivators, Walking Cultivators, and One and Two-Horse Riding Cultivators, Special Sugar Beet Tools, etc. Our new 1903 catalogue is just published. It contains over 100 illustrations with full descriptions and prices. It costs you nothing and will make you money. Write us for it.

S. L. ALLEN & CO.,
Box 1107-X, Philadelphia, Pa.

PLANET JR.

STEEL ROOFING
FREIGHT CHARGES PAID BY US

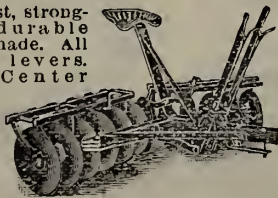


Strictly new, perfect, Semi-Hardened Steel Sheets, 2 feet wide, 6 feet long. The best Roofing, Siding or Ceiling you can use. No experience necessary to lay it. An ordinary hammer or hatchet the only tools you need. We furnish nails free and paint roofing two eides. Come either flat, corrugated or "V" crimped. Delivered free of all charges to all points in the U. S., east of the Mississippi River and North of the Ohio River

AT \$2.25 PER SQUARE
Prices to other points on application. A square means 100 square feet. Write for free Catalogue No 166
CHICAGO HOUSE WRECKING CO., W. 35th and Iron Sts., Chicago


OUR LOW HITCH DISC HARROW

Best, simplest, strongest and most durable Disc Harrow made. All steel. Double levers. Low hitch. Center draft. All sizes. With or without seeding attachments. Write for circulars and prices



TOLEDO PLOW CO., Toledo, Ohio

SEND YOUR NAME
for our special 15 day trial proposition on the **DANDY GREEN BONE CUTTER**. The fastest and easiest made. It will double your egg yield. Price \$5 up.
STRATTO, M. G. CO., BOX 76 ERIE, PA.



YOU CAN KEEP WARM WHEN OUT DRIVING AT A COST OF TWO CENTS PER DAY.

Who has not heard of the Lehman heater? The man who uses, during the winter, an open buggy or a closed carriage can make himself comfortable by its use. The cold weather is now about to visit us, and a demand for some handy and un-cumbersome appliance to obviate the frigidity of the winter climate is apparent, and the less cumbersome and more useful the article the more acceptable it is. The achievement has been reached by the Lehman heater. It takes up but little room, is always ready and for two cents will keep a carriage warm for twelve hours in the depth of winter.

Twenty years ago the bulk of the people slept in a cold room, waking and dressing in it, and went forth into a practically cold house, breakfast being generally over before the inadequate furnace arrangement of those days sent heat through all the house or apartments. The consequence was that injury to health ensued. As above stated, the Lehman heater fills the bill. It should be more generally known. It is made in the solidest fashion and should be in the hands of every man who uses a horse conveyance

There are 175,000 in use by horsemen, etc, who speak very highly of them. You cannot enjoy your ride in cold weather without one. Don't fail to write for circular and price list to Lehman Bros., manufacturers, 10 Bond street, New York, or J. W. Erringer, general Western sales agent, 297 Wabash avenue, Chicago, mentioning the *Southern Planter*.

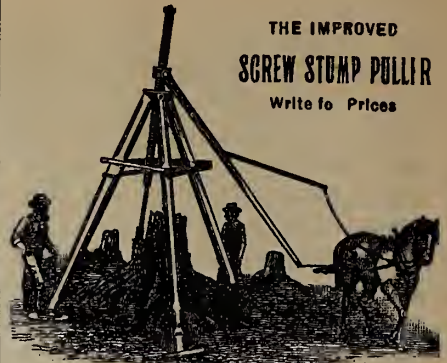
Duane H. Nash, of Millington, N. J., who is the long time advertiser and manufacturer of the famous Acme Pulverizer Harrow, Clod Crusher and Leveler, goes further to meet the purchaser on the sale of his implement than any manufacturer we have any knowledge of. Mr. Nash will send the Acme Harrow to any man anywhere who orders it and will give him ample time to make a thorough test of its good qualities in the preparation of any kind of soil, under any and all conditions, and for any crop.

If the Harrow is not found to be entirely satisfactory in every way the purchaser may return it at Mr. Nash's expense; That is a simple, straightforward business proposition which must commend itself to the mind of any fairly disposed man. It is further, a strong and indisputable evidence of the faith of the manufacturer in the high quality and utility of the implement which he is manufacturing.

It is not necessary, however, for us to dwell upon the quality of the Acme Harrow. It has long been advertised in these columns, and we doubt not but that hundreds of our readers have bought and are now using them with success. In all these years we have never heard a single complaint either against Mr. Nash or the Acme Harrow.

These Harrows are delivered free on board at distributing depots conveniently located, and can therefore be shipped promptly.

Write the manufacturer for prices,



THE IMPROVED
SCREW STUMP PULLER
Write for Prices

Chamberlin Mfg. Co., Olean, N. Y., U. S. A.

STUMP PULLERS



All Sizes and Prices. Catalogue Free.

MOHLAND & COMPANY,
BURLINGTON, IOWA.

STUMP PULLER



Most Powerful, Handiest and Strongest Built in the World.

We make 4 kinds in sizes to suit all needs and of any desired strength. Saves time and does the work right. The operation of pulling stumps and trees by our method is simple and easy. Send for Free Catalogue.

CHICAGO STUMP MACHINE MFG. CO.,
226 La Salle Street, Chicago, Ill.

HERCULES STUMP PULLER



Clears an acre of heavy timberland each day. Clears all stumps in a circle of 150 ft. without moving or changing machine. Strongest, most rapid working and best made.

Hercules Mfg. Co., 413 17th St., Centerville, Iowa.

FREE

From anxiety over wash day, are all who use a **DILLEY QUEEN WASHER**. We guarantee it to be the best. A trial machine sent at factory price. Agents wanted for exclusive territory. Write for catalogue with full description. We will surely please you.

LYONS WASHING MACHINE CO., Lyons, Mich.

PREPARE FOR WAR IN TIME OF PEACE!



Whatever you intend to do about **SPRAYING** prepare for it during the winter. Order your **Spraying outfit** and material now and you are prepared for war.

Knapsack Sprayers, Barrel Pumps, Bordeaux Mixture, Insecticides, Fungicides, &c.



LENOX SPRAYER & CHEMICAL CO.,
Dpt. 11. **PITTSFIELD, MASS.**
SEND FOR OUR BOOK ON SPRAYING

Get the Best



A Good Spray Pump earns big profits and lasts for years.

THE ECLIPSE

is a good pump. As practical fruit growers were using the common sprayers in our own orchards—found their defects and then invented **The Eclipse**. Its success practically forced us into manufacturing on a large scale. You take no chances. We have done all the experimenting.

Large fully illustrated Catalogue and Treatise on *Spraying—FREE.*

MORRILL & MORLEY, Benton Harbor, Mich.

The Deming Field Sprayer



A model implement for acreage work on
Potatoes, Strawberries, Small Nursery Stock, etc.
Sprays 4 rows of potatoes at once and adjusts for wide or narrow rows.

One Man Can Operate.

Can be attached to any barrel sprayer and fitted to any wagon. Fitted with famous Bordeaux or Deming-Vermorel nozzles. We fit everybody's needs in bucket, barrel, knapsack and other sprayers. Write for free spraying catalogue.

THE DEMING CO., Salem, Ohio.
Henton & Hubbell, Western Agts., Chicago, Ill.

SPRAY PUMPS

SAVE MONEY BY BUYING ONE OF OURS.
They will do as much work, being all brass are lighter to handle and are more durable, will generate a higher pressure thereby making them the easiest pumps to operate on the market. Write for catalog and get treatise on spraying free. Agents wanted. Mention this paper. **J. F. Gaylord, Successor to P. C. Lewis Manufacturing Company, Catskill, N. C.**

Mention the *Southern Planter* when corresponding with advertisers.

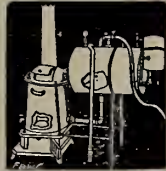
printed matter and terms of trial. Kindly say, in writing, that you saw this in our journal.

DECEMBER EGGS.

With the cold snap of December the egg supply usually drops off; not altogether, however, from the actual cold as from change in the feeding ration of the hens. At this time more than ever, poultry needs a liberal supply of animal food to take the place of the insects and worms the hens get on the range in summer time.

The Stratton Manufacturing Company, Erie, Pa., have just issued a very attractive book, entitled "More Money From Your Hens." It goes into the question of winter feeding very thoroughly and describes in detail the Dandy Bone Cutter, a well built, substantial machine for reducing green bone to poultry food. The manufacturers make a very strong claim of excellence for the Dandy, and sell every machine with a warranty to take it back and refund every cent paid for it should it prove unsatisfactory in any way after the purchaser gives it a fair trial. It is sold at a very reasonable price and is manufactured in a variety of sizes and styles. We know that every reader of *The Southern Planter* will be interested in the Dandy catalogue. It is sent free.

RIPPLEY'S FEED COOKER AND HEATER.



The subject of this illustration and paragraph is familiar to most of our readers. It is the combination feed cooker and heater manufactured by the Rippley Hardware Company, of Grafton, Ill. The advertisement setting forth its uses in brief appears in another column. No reason is apparent why a machine fitted to cook food for stock might not easily be made to go a step farther and furnish heat for stock buildings. The Rippley Company seem to have caught the idea in a very comprehensive manner. The farmer would frequently use heat in the dairy, poultry and swine buildings if it could be supplied without great expense, or by connection with a fire in operation and doing duty in other lines. This Rippley Cooker, considered merely as a cooker, is one of the most practical and useful on the market. It takes on a double value when it is employed to heat water in stock tanks two or three hundred feet away; to heat dairy, poultry and other buildings; to furnish steam for such necessary uses as grinding, separating cream, churning, etc. It can be used in the yard or set up and attached to a chimney in any building. Though small and compact and easily handled, one of its special strong points is that frequent removal is not necessary, it being able to perform its numerous duties equally well at any reasonable distance. Those of our readers who are interested in feed cookers or heaters should send for the Rippley catalogue. It is mailed free on application.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" & Cat. 305 free. W. Chester, Pa.]

Wagon World Awheel.



Half a million of these steel wheels have been sent out on our own wagons and to fit other wagons. It is the wheel that determines the life of any wagon, and this is the longest lived wheel made. Do you want a low down Handy Wagon to use about the place? We will fit out your old wagon with Electric Wheels of any size and any shape tire, straight or staggered spokes. No cracked hubs, no loose spokes, no rotten felloes, no resetting. Write for the big new catalogue. It is free.

Electric Wheel Co., Box 146 Quincy, Ills.

TOP BUGGY

DIRECT TO USER

\$33.50

Hickory Wheels, best steel Springs and Axles. Guaranteed fully.

Send for catalogue or call.

CHAS. C. CLARK & CO., 26 S. Main St., St. Louis.

WATER CLOSET COMBINATIONS,



Porcelain Bowl, Hardwood Seat and Tank, Nickel Plated flush and supply pipes, complete, each \$11.00.




Cast Iron Roll Rim Bath Tubs, length 5 ft. Complete with full set of nickel plated fittings, each \$11.00. They are new goods, ask for free catalogue No. 166 on plumbing and building material.

Chicago House Wrecking Co., W. 35th and Iron Sts., Chicago.

BOSTROM'S IMPROVED FARM LEVEL

Pat'd 1902. WITH AND WITHOUT TELESCOPE



Is no **MAKESHIFT**, but the best one made for Terracing, Ditching and Drainage. Price \$5 and \$10, including Tripod and Rod. Send for descriptive circulars and Treatise on Terracing, etc., Free.

Bostrom, Brady Bldg. Co., 31 1/2 W. Alabama St., Atlanta, Ga.

LATEST (Newton's Patent.)

Every DEHORNER Guaranteed



THOUSANDS IN USE.

Ask your hardware dealer for them or write **W. H. BROWN MFG. CO., DECATUR, ILL.**

Take Your Choice

The Convex—very simple, quick to operate. Bully V—latest and most powerful V-Knife made. Sent on trial, Cash Dishorner and other supplies. Send for catalog. Western orders filled from Chicago.

CEO. WEBSTER
Christiana, Pa.

A Kant-Klog SPRAYER

We want to send into every town and county a sample of our new self-operating Kant-Klog Sprayer. No farmer, fruit or vegetable grower can afford to be without one. They increase crops both in quantity and quality, and double your yearly profit.

FREE

TO AGENTS: \$20.00 A DAY is what one new agent made. Another has sold and delivered 660 machines and has 100 more sold for later delivery. With the complete detailed instructions we send our agents any man of ordinary ability can do as well.


For further information address,
Rochester Spray Pump CO., 21 East Av. Rochester, N. Y.

Incubator Results

are what you seek. The machine is a means to an end. Poultry raisers have no other concern about machines than to get results.

PETALUMA INCUBATORS and Brooders

are the oldest and most reliable machines on the market to-day. Hatches uniformly high in all climates, under all conditions. Self-regulating and ventilating, supplying moisture where needed. Copper and redwood the materials. Freight paid all over U. S. Free late catalog of incubators and brooders. Write for it.



Petaluma Incubator Co
Box 46 Petaluma, Cal.
or box 46,
Indianapolis, Ind.

The Automatic SURE HATCH INCUBATOR

with new automatic, direct action regulator, is the best hatcher on earth. Sold at fair price on

30 Days' Trial.

Don't experiment with untried machines. Get a Sure Hatch and be sure. New catalog, full of illustrations and valuable information free.



SURE HATCH INCUBATOR CO.,
Clay Center, Neb. or Columbus, Ohio.

IT COSTS YOU NOTHING


to make a trial on your own premises and find out what the



Reliable Incubator can do. Return it if it does not suit. That is the guarantee we give you. It's the many special featured machine, nursery, non-moisture, self-regulating, etc. Poultry book, No. 19, for 10c postage.

110 Yards Fine Poultry.

Reliable Incub. and Brooder Co.,
Box B-11 Quinley, Ill.



The PRAIRIE STATES KEEP AT THE HEAD. More made-more sold-more prizes won than ALL OTHERS combined.

Send for catalogue-just out-fine-est ever issued. Mention this paper.

PRAIRIE STATE INCUBATOR CO.
HOMER CITY, Pa., U.S.A.

342 FIRST PRIZES WON



VICTOR INCUBATORS

Hatch every fertile egg. Simplest, most durable, cheapest first-class hatcher. Money back if not positively as represented. *Way freight.* Circular free; catalogue 6c.

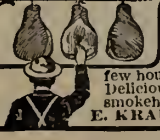
Geo. Ertel Co., Quincy, Ill.



WROUGHT IRON PIPE

Good condition, need short time only; new threads and couplings, for Steam, Gas or Water, sizes from 1/2 to 12 inch diameter. Our price per foot on 1/2 inch 3c; on 1 inch 4c. Write for free catalogue No. 1-3

CHICAGO HOUSE WRECKING CO.,
W. 35th and Iron Sts., CHICAGO.



Krausers' Liquid Extract of Smoke

Smokes meat perfectly in a few hours. Made from hickory wood. Delicious flavor. Cleaner, cheaper. No smokehouse needed. Send for circular.

E. KRAUSER & BRO., Milton, Pa.

IN THE INTEREST OF THE WHOLE PEOPLE.

Our readers will remember the Marvin Smith Company as having been the largest exclusive farm implement house in the country. Their well-known reliability and responsibility in this direction induced their many friends and patrons to write them from all sections of the country, sending in orders for goods which they did not then carry. It was this constant demand which induced them to add departments of hardware, tools, builders' supplies, builders' hardware, gentlemen's clothing all kinds, of hosiery, all kinds of underwear, gloves and mittens, cook stoves, ranges and heaters, sewing machines, tin and enamel ware of all kinds, lanterns, household supplies, trunks, valises, etc.

In looking over the catalogue, one cannot help express both surprise and wonder at the remarkably reasonable prices at which the various articles are sold. For instance, take their new High Art Colonial Cabinet, Ball-bearing Sewing Machine. The price is only \$18.95, a much better machine in every way than we had to pay \$35 to \$40 for elsewhere. Then there are such other cases of quality and value as the following: Men's full fleece-lined heavy winter underwear at the ridiculously low price of 45c. per garment; ladies' part wool underwear, jersey ribbed winter weight with all the latest and newest conveniences and methods of making at 50c. per garment; these same goods are usually sold at 75c. or more per garment in our home stores; a boy's split buckskin fleece-lined work or school mitten for 23c. per pair; mens split back glove, all seams welted, fleece-lined and with patent string fastening, at 35c. per pair; ladies' dressed kid gloves in medium weight, very fine and dressy, at \$1; just about such a glove as the stores usually charge \$1.50 for.

By all means, send to these people for their latest catalogue if you have not already done so. The book is almost certain to save you money on every article which you wish to buy.

Some idea of the Incubator business is gained when it is known that over 100,000 incubators were sold last year. The use of the incubator and brooder in poultry-raising is no longer an experiment. One of the firms that got a goodly share of this business is the Hawkeye Incubator Company, of Newton, Iowa. They were well pleased with their business of last year, but to say they are feeling good over prospects for the coming season is to put it mildly. Their advance sales for 1903 already exceed the entire output of last season. The Hawkeye is used in every State in the Union, and in Canada, and in many foreign countries. No wonder, for this Company guarantees every machine to give entire satisfaction or money refunded. They even sell on 30 days' free trial, giving the purchaser an opportunity to complete a hatch before accepting his machine. By all means, write to them for their catalogue if you are thinking of buying an incubator or brooder. Address Hawkeye Incubator Company, Newtown, Ia. Mention this journal.

GRIFFITH & TURNER SEEDS

Crown strictly by ourselves for the North, South, East and West, each variety in the section which secures its highest development. We aim to have everything the strongest and best of its kind.

WE PRACTICE NO DECEPTIONS

We do not offer \$1.00 worth of seeds for 10c, but we do give the largest and best value for the money. Our line of

FARM, GARDEN, SUPPLIES DAIRY, POULTRY,

is large and the most complete. Write for handsome new Catalogue No. 10. Sent FREE.

Griffith & Turner Co., 205 Paca St., Baltimore, Md.

WINESAPS

I have for sale several blocks of the finest two-year old Winesaps Apple trees ever grown in the State. The trees are well branched and measure from five to eight feet in height. Trees are dug from the nursery the day they are shipped.

8c. each for the finest lot under 100.
7c. " " " " " over 100.
6 to 7c. wholesale.

CHAS. F. HACKETT, Manager,
Bonavista Nurseries,
Albemarle County, Greenwood, Va.

..ELMWOOD NURSERIES..

ASPARAGUS

100,000 2-yr.-old Asparagus roots, 5 varieties. A special rate of \$3.50 per 1000 for 2 mos. for BARR'S, PALMETTO, CONOVER.

APPLES

A large general assortment, including WINESAPS and YORK IMPERIALS.

Splendid Assortment of Ornamental, Shade and Fruit Trees.

Splendid lot of POLAND-CHINA pigs ready for shipment. Also pure BARRED PLYMOUTH ROCK, BROWN LEGHORN, BRAHMA fowls at \$1 each.

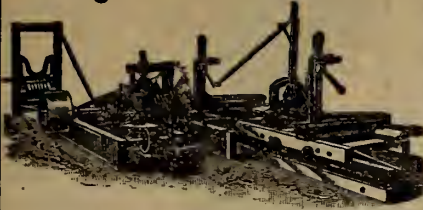
WRITE FOR OUR CATALOGUE.

J. B. WATKINS & BRO., Hallsboro, Va.

MARK YOUR STOCK. Use the

KENTUCKY ALUMINUM EAR LABEL. Made by F. H. JACKSON & Co., Winchester, Ky. Write to them for free samples.

FARQUHAR VARIABLE Friction Feed SAW MILL,

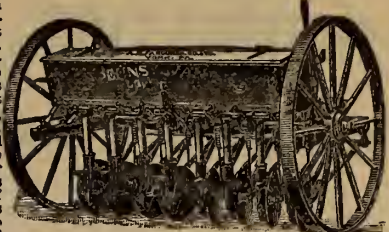


with patent feed, patent dogs and set works is the most convenient, durable, perfect in operation, and the cheapest high-class mill on the market. There are more of these mills in use than any other make, because they combine all the latest improvements. The Sawyer standing in one position, controls the engine, sets the log, and regulates the feed of the carriage. The carriage is moved forward and backward by means of the Reamy patent feed and backing device.

ALL ABOUT THEM IN THE CATALOGUE.

Pennsylvania Disk or Hoe Drill.

This Low-Down Disk Grain and Fertilizer Drill is mounted on a steel frame, giving it great strength and lightness. Each disc works independently and has an adjustable coil spring pressure of its own—enables the disc to cut its way through corn stalks, stubble, weeds, grass, etc. It is sure to put in the seed every time. Chain drive force feed, for grain, grass or phosphate. No gear—Davis feed power from center of main axle. No jolt—saves horses' necks. Accurate grain, grass, phosphate, and land measure.



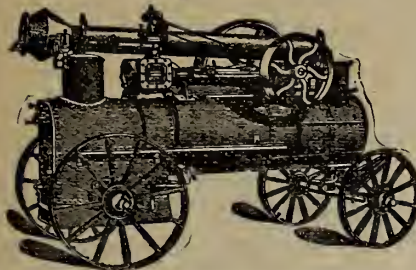
LOW DOWN, EASY TO FILL.

"FARQUHAR"

Here is a name

that stands for merit.

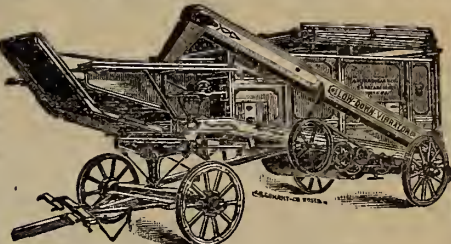
"IMPROVED" AJAX THRESHING ENGINE.



This portable Engine is made most carefully of the best material. The Boiler is made of the best grade of boiler steel, tensile strength, 55,000 to 65,000 pounds. The steel fire boxes are strongly riveted and tested at double the strain they will ever be required to use. No Farquhar Boiler ever exploded. The engine parts are of the most improved patterns, and of the best material known. You ought to know about this engine.

FARQUHAR LOW-DOWN SEPARATOR VIBRATOR

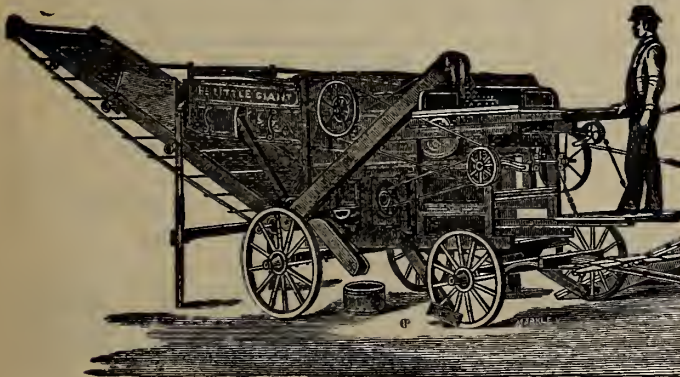
threshes more rapidly, saves all kinds of grain and delivers it in better condition than any other made. No cracking or wasting of grain. The separating capacity is very large and the machine cannot be crowded. It will easily take care of all the grain that can be put through the cylinder without wasting power. We build separators of seven different sizes, all described in the catalogue. We also make Clover Huller Attachment.



All these things fully described in the catalogue. It is free. Also full line including all kinds of farm machinery.

A. B. FARQUHAR CO., (Limited) YORK, PA.

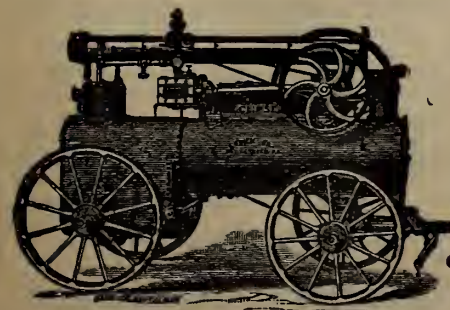
The most popular Machine in use for Peanut Picking and Grain Threshing are the



HEEBNER'S, LITTLE GIANT AND PENNSYLVANIA

Machines, and they have splendid improvements for 1903. They are built in first-class manner, and are strong and durable. The price is within the reach of all. We guarantee them to do the work satisfactorily. We will mail catalogue and testimonials, and quote prices on application.

RUBBER, LEATHER and GANDY BELTING.

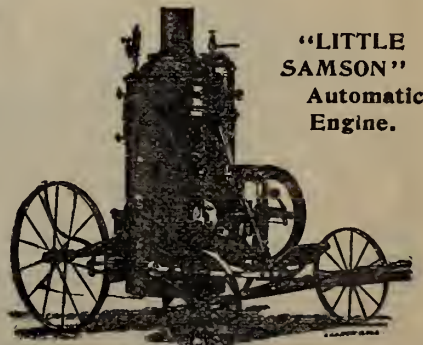


FRICK'S "ECLIPSE" ENGINES and BOILERS.

ERIE ENGINES and BOILERS.

THE CELEBRATED "CHASE" SAW MILLS

and "DE LOACH" MACHINERY.



"LITTLE SAMSON" Automatic Engine.

This cut shows our 5 and 7 h.-p. "Little Samson" Vertical Automatic Engine, for running threshers, peanut pickers, cutting feed, sawing wood, etc. Larger sizes also furnished.

STRATTON & BRAGG, 20 and 22 N. Sycamore St., Petersburg, Va.

THE AGONY OF INDIGESTION

How a Virginia Woman Was Cured.

Mrs. S. P. Thompson, of Rodophil, Va., suffered terribly with indigestion for years. Every mouthful of food was a martyrdom. Every meal was a repetition of agony—until she heard of YAGER'S SARSAPARILLA WITH CELERY. From the first bottle there was an improvement. Food began to do her good instead of injuring her health. Mealtime became a pleasure instead of a time of suffering. YAGER'S SARSAPARILLA changed the whole aspect of life for Mrs. Thompson, it has done the same for hundreds of others in similar situations. Her gratitude to the medicine does not stop with simply appreciating it—she has told her friends and neighbors of it, and of the wonderful cure it has effected in her case.

YAGER'S SARSAPARILLA WITH CELERY is working astounding cures in hundreds of 'owns to day. Every mail brings notable additions to the great volume of evidence already accumulated as to the curative power in all diseases of the nerves, blood and functional derangements. It is sold by all druggists, 50c. a bottle. Made by Gilbert Bros. & Co., Baltimore, Md.

The Baby Had Croup

—one of the children had a cold; father had bronchitis; mother had a touch of pleurisy. They all took Honey-Tolu, and were cured. Sold by all druggists, 25c. a big bottle. Made by

GILBERT BROS. & CO.,
BALTIMORE, MD.

HAVE YOU EVER USED
GLEASON'S
HORSE AND CATTAE
POWDER?
TRY A PACKAGE.

FARMERS' BOYS AS BASE BALL PLAYERS.

It is the Farmer Boy who takes the lead in the Base Ball and Foot Ball teams of the present day, who from early childhood has gained brawn and bravery through hard work upon the farm; yet he rarely gets the credit of it, for the success of a team is usually attributed to the city lads, when, really, it is due to one or two rough farm boys who pulls them through.

The fact is established by the following little story of actual occurrence:

A wail of despair arose in one of the principal Academies of the State when its base ball team was organizing for its spring work. The trouble was that young Hal Hayseed, who had been Captain of the team the previous session, had not returned, and his place could not be successfully filled. After much debating and consultation, it was decided to send a committee of three, one of the teachers and two of the boys, to visit old Farmer Hayseed, who lived not far away, and persuade him to send his son back, making him liberal offers for his tuition and advancement in study.

As they approached the farm, they found young Hayseed busy ploughing for corn in the field, dressed in his rough farm suit.

"What a pity that such a fine fellow should be thus working among the clods," exclaimed one of the boys as they drove up.

"Yes, and to lose such valuable time from his studies," said the teacher.

"O! we must get him away from here, for our team cannot do without him," cried the third.

Young Hayseed saw the approach of his former companions, so dropping his lines, he came forward smiling and greeted them heartily.

There was no abashment in his face at being found in such menial work, but, with a manly voice, welcomed them to the farm, and took them to the house to see his father.

They found the old man busy in his garden planting seeds; he saw the approach of the young gentlemen, and guessed their errand; and though shaking his head ominously, yet he dropped his work and greeted his young visitors kindly.

The old gentleman listened respectfully to their praise of his boy, and their wish to do him great good; he was touched and surprised at such liberal offers to supply his son's place on the farm by other help, but he quickly saw that their chief object was to place him on their base ball team.

The old man now spoke plainly.

"Young gentlemen, my son is all the help I have on the farm; if you take him, I am helpless, for I cannot supply his place! I wish to give him an education and profession, but do not intend to part with him for base ball or foot ball playing; now, ask him which he prefers, to work for me or play ball."

It was a great temptation and allure-ment to Young Hayseed, as presented by his gay and festive companions; and too, a great compliment to his skill at ball playing.



300
pounds

per acre more
Wheat, Oats,
Rye or Barley
may be raised
for each 100
pounds of

NITRATE OF SODA

used as a Top Dressing on the soil. Frequent trials at Agricultural Experiment Stations the world over fully prove this to be so.

Your address on a Post Card will bring you our free Bulletin "Practical Hints for the Profitable Application of Nitrate of Soda as a Fertilizer," and others full of interest to farmers.

WILLIAM S. MYERS, Director,
12 John Street, Room 148 New York.

SAN JOSE SCALE and other insects can be controlled by using Good's Caustic Potash Whale Oil Soap, No. 3.

It also prevents Curl Leaf. Endorsed by entomologists. This soap is a fertilizer as well as insecticide. 50 lb. kegs, \$2.50; 100 lb. kegs, \$4.50. Half barrels, 270 lbs., at 3½c. per lb.; barrels, 425 lbs., at 3½c. Large quantities, special rates. Send for circular.

JAMES GOOD,
939-41 N. Front St., PHILADELPHIA, PA.

FRAZER

Axle Grease Best in the world.

Its wearing qualities are unsurpassed, actually outlasting 3 bxs. any other brand. Not affected by heat. Get the Genuine.

FOR SALE BY ALL DEALERS.

AGRICULTURAL and BUILDERS' LIME

Send for Circulars and Price-List.

FELLSWORTH LIME WORKS

REEVES CATT, Agent,
Bodley, Augusta County, Va.

S. B. ADKINS & CO.

4 and 6 Governor Street,
RICHMOND, VA.

EXPERT BOOKBINDERS

and Commercial Printers.

Few young men could resist such an offer, for he knew the good times and high praise his team would have in many a contest over the State; so it was some moments before he spoke after his old father had turned to him and said, "Say, my son, what is your wish?"

Drawing himself up proudly, he replied—"No, boys, I cannot leave the farm; I have begun the crop and will go through with it; I would like to be with you to struggle for the championship on the ball team, but my father needs me, and my duty is here."

His handsomely-dressed companions were silenced for a moment, and then turning in admiration of him, the teacher shook his hand heartily as he said—

"You are right, and we honor your decision, though regretting deeply you cannot be with us;" so saying they drove off with rather sad countenances, while young Hayseed returned to the field and took up ploughing again.

There was a loud wail in the school when the boys saw the committee return without Hal Hayseed, and the exclamation went up—"What shall we do!"

Hal, too, felt grievously disappointed that he was necessitated to stay on the farm, yet he felt he was doing his duty and stuck manfully to his work, planted and cultivated his little crop of corn thoroughly, and it being a good season, his heart was made glad when at last he saw the crop safely housed, and was complimented by his neighbors on his success; and his satisfaction was still greater as he saw the beam of joy and gratitude upon his old father's face.

The autumn days had come, and his work laid by, and now he made a visit to his former schoolmates to see how the foot-ball team was progressing.

At the sight of Hal, the boys raised a great shout of joy, for they had just received a challenge to a foot ball contest, and were in a quandary how to fill it; but at the sight of Hal's smiling face they felt that he could help them out of the difficulty.

"Yes, boys," replied Hal to their eager question, "the corn crop is housed, and I am now free to help you. My farm work has only served to harden me for the gridiron, and I have not forgotten how to play."

It is needless to say, the challenge was accepted. Hal was given the chief position and by his skill and prowess they easily won the game.

Hal Hayseed now received many encomiums from his old schoolmates, who admired him all the more, not only for helping them, but for sticking to the farm and helping his old father first in the needs of the family. How many farmers boys are now doing the same?

Albemarle Co., Va. E. C. M.

The annual report of the Secretary of Agriculture is one of the most interesting reports ever sent out from the department. It bears evidence of being the work of a man thoroughly competent and fully conversant with all the d-tails of agricultural life and deeply imbued with the importance of the application of science to the practical work of the farm. Every farmer should send for a copy of the report.

Feed Your Land

with fertilizers rich in Potash and your crop will crowd your barn.
Sow Potash and reap dollars.

A Fertilizer Without

POTASH

Is Not Complete.

Be good to your land and your crop will be good. Plenty of Potash in fertilizers spells quality and quantity in the harvest.

Our Five Free Books

are a complete treatise on fertilizers, written by men who know. They are useful to every man who owns a field and a plow, and who desires to get the most out of them. Your name on a postal will do.

GERMAN KALI WORKS

93 Nassau Street, New York



FEED MILLS.

EVERY MAN HIS OWN MILLER.

The latest improved. Does all kinds of work. Most durable; has ground over 15,000 bushels without repair or expense. The fastest grinder; has ground 300 bushels in 4 hours. Lightest draft and lowest price. **The World's Best!** Send for prices to the manufacturers.

N. M. FIELD MFG. CO., St. Louis, Mo.



It Never Chokes
The large hop, per. double breakers, double set of burrs and force feed make


The KELLY DUPLEX GRINDING MILL

the model for grinding all grains and unshucked corn. Has feed regulator and grinds more easily and faster than others. Makes excellent meal, power. Free catalogues to any one. Is most substantial, fitted to any grinds feed to any fineness. Write for it. **THE O. S. KELLY CO., Dept. T SPRINGFIELD, OHIO.**

The Old Reliable Anti-Friction, Four-Burr MOCUL MILLS.

No gearing, no friction. Thousands in use. Four-horse mill grinds 60 to 80 bus. per hour. We make a full line of Feed Mills, best ever sold, including the famous Iowa grinder No. 2, for \$12.50. Send for free cat.

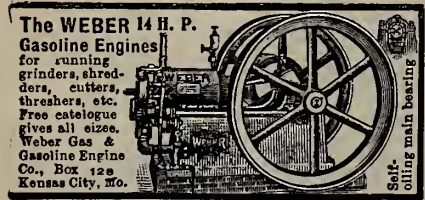
Manufactured and sold by the Iowa Grinder and Steamer Works, Waterloo, Iowa

FRENCH BURR and ATTRITION MILLS

grind corn cobs and all kinds of grain. Make the finest meal. Guaranteed greater capacity than any other of same size. **Fifteen Days Free** to prove superiority. Many thousands in use. Make no mistake. Get our free catalogue and price list before buying.

SPROUT, WALDRON & CO., Box 30 Muncy, Pa.



The WEBER 14 H. P. Gasoline Engines

for running grinders, shredders, cutters, threshers, etc. Free catalogue gives all sizes. Weber Gas & Gasoline Engine Co., Box 128 Kansas City, Mo.




TRY IT BEFORE YOU BUY IT

We believe we have the best farm grinder made and are willing to let you prove it.

DITTO'S Triple Geared Ball Bearing FEED GRINDER

is sent on trial. If it is not the largest capacity, easiest runner, don't keep it. **G. M. DITTO, Box 48, Joliet, Ill.**



ENGINES, BOILERS AND MACHINERY.

When you want good rebuilt machinery at bargain prices, write for our Catalogue, No. 163 We carry all kinds of engines (gas, gasoline and steam power), boilers, pumps, and mill supplies in general. **CHICAGO HOUSE WRECKING CO. West 36th and Iron Sts., Chicago.**

WITH THE ADVERTISERS. This issue contains the advertisements of the leading business firms of the country, and we bespeak for them the liberal patronage of our readers.

The Lenox Sprayer and Chemical Co., of Pittsfield, Mass., are advertising their well known Bordeaux Mixture and Sprayers for applying same, in this issue.

The famous Elk Garden herd of Shorthorns is offered by Mr. H. C. Stuart. Splendid chance for some good Shorthorn blood.

Polled Durhams are advertised elsewhere in this issue by Mr. J. L. Humbert, University of Va.

Look up the advertisement of the Bucher & Gibbs Plow Co. Their Imperial Plows are already well known to numbers of our readers.

Oak Ridge Farm is offering some nice Red Polls, at right prices.

The Miller Manure Spreader is offered by the Newark Machine Co., of Newark, Ohio. Send for circulars and prices of this labor-saver.

Messrs. C. M. Armes & Co. are advertising an excellent old Virginia plantation in this issue.

Baker's Jack Farm has 150 Jacks and Jennets for sale.

Spectacles, Optical Goods and Cameras are advertised by the S. Galeski Optical Co., of Richmond, Va.

Messrs. J. M. Thorburn & Co., Seedsmen, New York, would like to mail their 102nd Annual Catalogue to our readers. Look up the advertisement.

Mammoth Bronze Turkeys crossed on Wild Turkeys are advertised by Mrs J. J. Franklin.

The Merchants National Bank of Richmond, Va., makes a splendid showing in its annual statement published elsewhere in this number.

The Iowa Grinder and Steamer Works are new advertisers in this issue. They have a good feed mill, about which they would like to inform our readers.

C. C. Clarke & Co., St. Louis, Mo., offer buggies, etc., in another column.

Knight & Jetton, Murfreesboro, Tenn., offer Jacks and Jennets in another column.

The Biltmore Farms advertise their annual Brood Sow sale in this issue. Look up the advertisement and write for a catalogue.

Mohland & Co., Burlington, Ia., are advertising Stump Pullers in this number.

The Ohio Carriage Mfg. Co., Cincinnati, Ohio, begin the season's advertising with a card in another column.

Biltmore Standard Poultry is offered in a half-page advertisement on another page.

The Sydnor Pump and Well Co., Richmond, Va., are new advertisers in this issue. Gasoline Engines are prominent in this month's advertisement.

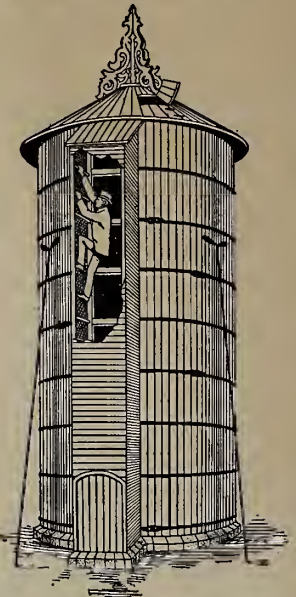
A splendid Weeder is advertised by the Keystone Farm Machine Co., York, Penna.

The Roderick Lean M'fg Co., of Mansfield, Ohio, are advertising the celebrated

THE "LANSING" PERFECT TUBULAR SILO

IS THE BEST SILO MADE.

Continuous Doorway. Have no other.



Insist on having the Lansing, IT WILL SAVE YOUR ENTIRE CROP.

A. M. D. HOLLOWAY, Builders' Exchange, Phila., Pa., U. S. A. Write for Catalogue and price.



Made Since 1868

RODERICK LEAN FARM Implements

Made by experienced workmen of special material. Acknowledged by farmers superior to all others. **SOLD ON THEIR MERITS.** Spike Tooth Harrows. Spring Tooth Harrows. Disc Harrows. Land Rollers. Hand Carts.

Write for catalogue. **RODERICK LEAN MFG. COMPANY, Mansfield, O.**

Wheels or Shoes on Pear.

WANTED TO RENT

A 2 OR 3 HORSE-POWER GASOLINE ENGINE.

Want it for 1 or 2 years, with privilege of buying. Must be as good as new. Address **JNO. W. MARTIN, Greenwood, Va.**

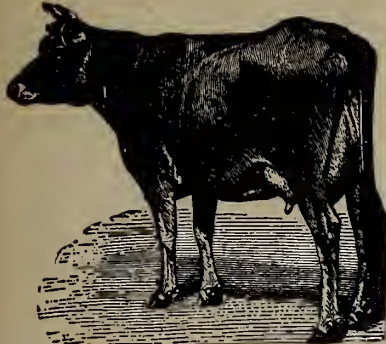
SHIP YOUR FURS

AND SHEEP PELTS TO **McMILLAN FUR & WOOL CO., Minneapolis, Minn.** WRITE FOR CIRCULARS

RAW FURS.

Write for free price-list. Read FUR AND WOOL, only paper of its kind in the world. Copy free. **J. E. MANLOVE, Bushnell, Ill**

BARREN COWS



Cows That Will Not Get With Calf.

About one cow in ten is barren. Usually large milkers have this trouble. The common cause is a weakness of the private organs, making the animal either refuse to mate at the regular time, or, if she will mate, the desired result will not be obtained. The loss from one barren cow will eat up the profit of at least five paying ones. For this trouble we recommend

Kow - Kure

FOR COWS ONLY

Thousands of barren cows have been made to breed by the use of this great cow medicine.

HADLEY, PA., Dec. 13, 1900.

DAIRY ASSOCIATION:
Gentlemen:—I had a cow, the best one on the farm, which I could not get with calf. I fed one box of Kow-Kure and she caught the first time I drove her.
Yours, A. E. MCDOWELL.

Kow-Kure is in powder form, to be given in regular feed. It cures abortion, barrenness and scours, removes retained afterbirth and caked udder, strengthens the appetite, purifies the blood, vitalizes the nerves, and prevents disease. It increases the milk. It is a medicine for cows only, made by the Dairy Association, Lyndonville, Vt. Price 50 cents and \$1.00,

The RICHMOND, FREDERICKSBURG and POTOMAC R. R. and WASHINGTON SOUTHERN R'Y

Form the Link connecting the
Atlantic Cost Line R. R.,
Baltimore and Ohio R. R.,
Chesapeake and Ohio R'y,
Pennsylvania R. R.,
Seaboard Air Line R'y
and Southern R'y.

Between all points, via Richmond, Va.

Fast Mail, Passenger and Express Route between Richmond, Fredericksburg, Alexandria, Washington, Baltimore, Philadelphia, New York, Boston, Pittsburg, Buffalo and All Points North, East and West.

W. P. TAYLOR, Traffic Manager, Richmond, Va

Lean Harrows and Roller in another column.

The Prairie State Incubator, well known to most of our readers, is offered by its makers in this number.

Nursery Stock, Strawberry Plants, etc., are advertised by W. T. Hood & Co. W. F. Allen, Franklin Davis Nursery Co., H. Lightfoot and others. Get catalogues before making up your list.

The Eureka Mower Co., Utica, N. Y., advertises a splendid line of implements in another column. Look up the advertisement and write for prices on what you need.

The Davidson Harrow Co., Utica, N. Y., which is among the largest makers of Harrows in the world, has an advertisement in this issue.

Yager's Sarsaparilla with Celery is advertised as usual in this issue. Ask your druggist for a trial bottle.

The J. A. Salzer Seed Co., La Crosse, Wis., starts the season's advertising with an advertisement in this number.

Look up the advertisement of the Standard F. C. Incubator in this issue.

Morrill & Morley, Benton Harbor, Mich., make the Eclipse Spray Pumps, and are advertising them elsewhere in this issue. It is interesting, and it gives one confidence in their goods to know that this firm were originally, as they still are, one of the largest growers of fruit in this famous section, and in using the best spraying apparatus obtainable at that time, found all open to objection as not doing perfect work. They set to work and made a machine after their own ideas, which gave such satisfaction that neighboring growers insisted on duplicate outfits. Actual test by the most practical people in the country has developed a high degree of efficiency in the Eclipse, and has made its makers one of the largest manufacturers of spraying machinery in the country.

Write for their catalogue, which embodies valuable information about spraying, and mention seeing advertisement in this journal.

FOR BIG HATCHES.

The Reliable Incubator continues year after year to lead the world in sales, both in this country and abroad. It has long ago proved its worth. Experienced poultrymen know exactly what they can count upon when they start it; they run no risks. The Reliable is built by practical poultrymen who devote all their time and energy to the poultry and incubator business and keep constantly improving their product. The long years of experience which they have had is worth thousands of dollars to poultry raisers. A part of this experience is incorporated in the new catalogue they have just issued, and we know that every one of our readers will find it of great interest and practical value. Don't fail to send for a copy, enclosing 10 cents for postage. Address, Reliable Incubator and Brooder Co., Quincy, Ill.

Mention the Southern Planter when corresponding with advertisers.



Warranted to give satisfaction.

GOMBAULT'S CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

USE

FOUTZ'S HORSE AND CATTLE POWDER

A medicine which makes sick animals well, the diseased whole, the weak strong and the thin fat. It will restore lost Appetite, expel Worms and cure Chronic Cough, Heaves, Influenza, Distemper, Hidebound, Indigestion, Constipation, Flatulency and all Stomach and Bowel trouble.

The finest of all animal vitalizers and tonics and the only one which increases the coefficient of digestibility of protein.

PRICE PER PACKAGE

5 PKGS \$1.00

10 PKGS \$2.00

MAR 31 '10

Get the Genuine or send to us. Pamphlet No. 9 Free.

DAVID E. FOUTZ
BALTIMORE, MD.

Sold by All Dealers.

Fistula and Poll Evil.

You can treat these diseases yourself and cure them in 15 to 30 days. Fleming's Fistula and Poll Evil Cure is easy to apply, perfectly safe to use, and your money is promptly refunded if it should ever fail to cure.

Interesting Booklets Free.

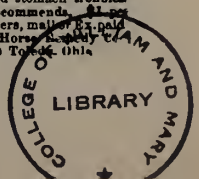
We have two booklets to send you. One tells about Fistula, Poll Evil, Spavin, Ringbone, Curb, Splint, Knee-Sprung, Lump Jaw, etc., with instructions how to cure them.

The other proves that you can cure them. Write to-day.

FLYING BROS., Chemists,
22 Union Stock Yards. - Chicago, Ill.

DEATH TO HEAVES Guaranteed

Newton's Heaves, Cough, Dis-temper and Indigestion Cure. A veterinary specific for wind throat and stomach troubles. Strongly recommended. \$1 per can. Dealers, mail order, paid. Newton's Horse & Cattle Remedies (T) Trade, Ohio



An Old VIRGINIA PLANTATION FOR SALE CHEAP.

410 ACRES of the finest land in the State of Virginia, lying four miles north of the City of Roanoke, in the very best section of Roanoke county. This land has been worked a little hard, but could easily be brought back to its once high state of cultivation. It sold before the Civil War, without any buildings, for \$100 per acre. There is upon it an old fashioned Virginia Mans on (brick), with ten rooms, which cost the owner when built, some thirty years ago, \$20 00. The dwelling is slightly out of repair, but a few hundred dollars spent would make it one of the finest farm houses in the State of Virginia—in fact, equal to most city mansions. Good barn, and all necessary out-buildings. The land is all level and in fairly good fix, good orchard, and a well of water as cold as ice at the back door. With a couple of thousand dollars spent on this place, it can be made one of the finest farms in the State of Virginia. Owing to the fact that it must be sold in order to wind up an estate, it is offered at the remarkably low price of \$18,000.

TERMS: One-third cash, balance in one and two years. Possibly easier terms can be arranged. Any one wanting an ideal old Virginia country home will buy this property if they once see it. Write us or come and let us show you this property.

If you have any real estate for sale, no matter where located, send us description and price. We can sell it. If you want to buy real estate anywhere in the United States, write us. Your wants will be supplied.

No. 119. CHAS. M. ARMES & CO.,
No. 213 Jefferson Street, - Roanoke, Va.

HOMES AND THE PLACE TO FIND THEM.

No place in the United States can a man do so well at farming, for the money invested, as in Virginia. Lands are cheap; climate good, and the best of markets close at hand. It is the State of all others, for a comfortable all the year round home. The James River Valley Colonization and Improvement Company offer superior advantages to land purchasers. For free 36 page land pamphlet, address

W. A. PARSONS, Vinita, Va.

To HOMESEEKERS.

"THE BUSINESS OF FARMING IN VIRGINIA"

Is the title of a new pamphlet issued by the Norfolk and Western Railway Company. We will gladly mail you a copy.

W. B. BEVILL, PAUL SCHERER, Agt.
G. P. A., Lands and Immigration,
Roanoke, Va.

"COOLUMU" STOCK AND DAIRY FARM FOR SALE.

Large house; 160 acres land well watered and wooded, wood enough to bring the price asked for the place. 1 mile from the growing manufacturing town of Henderson N. C.

Price, \$3,500. One-half cash, balance in 1 and 2 years. Will sell cows with dairy if desired. Reasons for selling, can't look after my office and dairy too. Dr. G. G. TAYLOR, Henderson, N. C.

I Can Sell Your Farm
no matter where it is. Send description, state price and learn how. Est. '96. Highest references. Offices in 14 cities.
W. M. Ostrander, 1845 N. A. Bldg., Philadelphia

MAGAZINES.

The "New Year" number of Lippincott's Magazine is a veritable mine of good fiction, containing a whole novel and nine short stories, besides several papers of timely interest, some choice verse, and fun galore in the department called "Walnuts and Wine."

The novel is "The New Heloise," by Mrs. Schuyler Crowninshield. In this there is new evidence that "Love Laughs at Locksmiths" and stone walls—even those of a French convent. There is a young probationer behind these walls seeking refuge in priestly garb from a distasteful marriage arranged by a too zealous stepmother. But he is not destined for such a life, and Love is waiting for him in the form of as charming a French girl as can be imagined. A candidate is lost to celibacy and happiness reigns supreme.

Edgar Fawcett's story, "The Resurrection of Edith," is an absolutely novel plot, both weird and fascinating. There are two Western tales: one by E. Boltwood called "A Bivouac de Luxe," and one by H. Giovannoli called "A Bull Mountain Pastoral." Both of them are so good it is difficult to pick the winner. Albert Payson Terhune contributes what may be considered his best effort, and his is a name well known in the story-writing world. It is entitled "The Man With the Shoulders." "Judith in Mackford's Entry," by Grace Rhys (wife of the English novelist, Ernest Rhys), is a pathetic story of a pretty Irish girl who was induced to go to London to better herself, and who was lured into the disreputable "Mackford's Entry." Ina Brevoort Roberts, the author of that popular novel published in Lippincott's entitled "The Lifting of a Finger," contributes a delightful tale entitled "The Decision." W. A. Fraser's story, "The Resurrection of P. I. G.," is both humorous and earnest. "A Stolen Day," by Harriet Clay Penman, is about a day's journey on the cars, with a physiological touch which is charming. Bernice C. Caughey contributes an attractive sketch called "A Fair Fee," in which a man shows how clever he can be to win the girl he loves.

The proper ripening and maturing of whiskey depends on the care and method of storage. The warehouses of the Hayner Distilling Company are of the most modern and improved style, constructed entirely of brick and steel, and equipped with the hot air system of heating and ventilating, which keeps the whiskey at a uniform temperature the year round. As a result, their 7-year old is as fully developed as 14 year-old aged in the ordinary old-fashioned way, and it's better, too, for an uneven temperature of extreme heat and cold destroys the quality and flavor.

During the entire process of manufacture, and from the time it is stored in barrels in their warehouses, until seven years later, it is bottled and shipped, Hayner Whiskey is under the watchful care of ten of Uncle Sam's Government officials. It goes direct from their distillery to you, with all its original richness and flavor, carries a United States Registered Distiller's Guarantee of Purity and

PLANTATION For Sale.

If any person desires to purchase a splendid James River Plantation, consisting of 1,000 acres of the best land in the State, together with all stock, implements, grain, etc., I offer mine at \$20,000. After you see it, and have particulars, you will agree it is cheap at this figure. Address

"PLANTATION," care Southern Planter Office

WE HAVE A LARGE LIST OF FRUIT, POULTRY and TRUCK FARMS.

Ten, Fifty and One Hundred Acres each, with good buildings, close to steam and trolley lines, easy access to the city. Also

GRAIN AND STOCK FARMS
From 100 to 1,000 acres at low prices, all the way from \$5 to \$50 per acre. Write for Catalogue.

THE VIRGINIA LAND AGENCY, Richmond, a
J. R. HOCKADAY, Manager.

"PIEDMONT" And all that it Implies."

Good land, climate, markets, shipping facilities, churches, schools, good health, moderate prices, easy terms.

MACON & CO., - Orange, Va.

FINE FARMS in the great fruit, grain and stock section of VIRGINIA. Best climate and water in the U. S. Near great markets, with best educational advantages. For further information, address
ALBEMARLE IMMIGRATION CO.,
SAM'L B. WOODS, Pres. Charlottesville, Va.

Virginia Farms

All prices and sizes. Free list on application.

WM. B. PIZZINI CO., Richmond, Va.

VIRGINIA FARMS

\$3 PER ACRE AND UPWARDS.

EASY PAYMENTS. CATALOGUE FREE.

GEO. E. CRAWFORD & CO., Richmond, Va.
Established 1875.

GO SOUTH. For full particulars
write A. JEFFERS,
Norfolk, Va.

IF YOU WISH TO SELL —OR BUY— VIRGINIA LANDS

Communicate with us. Write for free "Virginia Real Estate Journal," containing many splendid bargains.

R. B. CHAFFIN & CO., Inc.,
No. 1 N. 10th St., Richmond, Va

"Crop Growing Crop Feeding"

BY PROF. W. F. MASSEY.

383 Pp. Cloth, \$1.00; Paper, 50c.

We offer this splendid work in connection with the Southern Planter at the following prices:

Southern Planter and Cloth
Bound Volume, \$1.25

Southern Planter and Paper
Bound Volume, 90c.

Old or new subscriptions.

LEGHORN POULTRY YARDS

Have for sale a limited number of Single Comb Brown and White Leghorn Pullets and Roosters. Best layers known. Prize-winning stock. Price, \$1.00 to \$1.50 each. Eggs in season at \$1.00 for 16; \$5.00 per 100. Satisfaction guaranteed. Address

A. T. MATTHEWS, Box 36, Parksley, Va.

HOLLYBROOK FARM

Has for sale a few Extra Fine Cockerels of

Barred Plymouth Rocks,
White and Silver-Laced Wyandottes,
Light Brahmas,

All vigorous, thoroughbred stock.
Write for prices.

HENRY W. WOOD,

Hollybrook Farm, Richmond, Va.

**SILVER LACED
WYANDOTTES**

Choice purebred specimens of either sex, \$1 each, in any quantity. Eggs in season.

Dr. H. H. LEE,
Lexington, Va

SPECIAL SALE.

National Strain,

M. BRONZE TURKEYS.

Descendants of prize winners. Sold in pairs or trios. Large, beautiful birds, at exceedingly low prices. The first orders will get pick of large flock. Correspondence solicited.

PIEDMONT POULTRY PLACE,
Miss E. Calie Giles, Prop., Whittle's Depot, Va.

—FOR SALE—

7 EACH PURE BRED

**SILVER-LACED WYANDOTTE
COCKS and PULLETS**

At \$1.00 Apiece.

G. F. COX, - Irwin, Goochland County, Va.

**MAMMOTH BRONZE TURKEYS
FOR SALE.**

Apply to R. E. CREE, Crozet, Va.

Age, and saves you the enormous profits of the dealers. Read the Hayner Company's offer elsewhere in this journal.

CATALOGUES.

T. W. Wood & Sons, Seedsmen, Richmond, Va. This old firm, which conducts the largest seed business in the South, has issued one of the finest seed catalogues which it has ever got out. It is replete with information of the greatest value to every farmer, trucker and gardener, and will be sent free to all who apply for it.

Prairie State Incubator Co., Homer City, Pa. This company has issued the finest catalogue we have ever seen gotten out by an incubator company. It is beautifully illustrated and got up in the finest style. It is really a work of art. All who desire information on incubators should send for it.

McCormick Division International Harvester Co. of America, Chicago, Ill., are sending out a beautifully executed pamphlet descriptive of their well-known machines. Farmers should send for this. Every detail of the machines is fully described and illustrated.

The Stover Manufacturing Co., Freeport, Ill., send out a fine catalogue of their well known grinding mills, of which they make the largest and most complete line of any company.

Aspinwall Manufacturing Co., Jackson, Mich. Catalogue of potato machinery. Every potato grower should see this catalogue.

John Lightfoot, Sherman Heights, Tenn. Catalogue of strawberry plants.

We beg to acknowledge, with thanks, the receipt of a copy of the Congressional Directory from Senator Mar. in.

The International Stock Food Company, Minneapolis, Minn., inform us that they have just purchased for \$60,000, the champion harness horse of the world, Dan Patch, 1:59½. His permanent home will be the International Stock Food Farm, near Minneapolis, where his owners have built the finest barns and stables on any farm in the country. These stables follow lines which we have frequently suggested in these columns. They are practically detached from the barn and only one story in height and lighted from both sides.

Ignis Fatuus? A problem in Fuel, submitted by Edward Atkinson. Ph. D.

In this little pamphlet Mr. Atkinson suggests the possibility of the farmers beating the coal barons in supplying the fuel needed to keep the people warm and the wheels of industry revolving by so preparing corn stalks as to make them a feasible fuel. As the result of an examination by an expert, it is found that 20 tons of corn stalks and fodder is equivalent to about 14 tons of good coal. The problem is now to put this into good shape for handling on the market.

Reg. HAMPSHIREDOWN SHEEP

Of the best breeding. One lamb weighed 145 lbs. at 5 mos. old. Prices right.

SLATE TURKEYS

Are the most domestic, \$5 per pair.

BUFF PLYMOUTH ROCKS,

\$1 each.

J. D. THOMAS, - Round Hill, Va.

**WHITE PLYMOUTH ROCKS,
HOLLAND TURKEYS**

Fine strains and beautiful birds. Will be sold at reasonable prices. Farm bred birds and very healthy; six months old. A few Setter puppies a month old. For prices and particulars apply

JOHN A. CLARK, - SHIRLEY, VA.

THE IMP. FRUIT AND POULTRY FARM

—OFFERS—

**200 B. P. ROCK and S. C. B. LEGHORN
COCKERELS and PULLETS**

At only \$1 each. This stock is pure, and will please.

P. H. HEYDENREICH, Prop., Staunton, Va.

**BROWN LEGHORNS
(Single Comb)**

Some fine, vigorous cockerels at \$1.00 each. 6 firsts at Richmond Show, Nov. 24-29, 1902.

WHITE PLYMOUTH ROCKS

R. W. HAW, Jr., - Centralia, Va.

**BARRED and BUFF
PLYMOUTH ROCKS**

Cocks and Cockerels, \$1.50 and \$1.00 each, trios, \$5.00.

FRED NUSSEY, - Summit, Spotsylvania Co., Va.

**WHITE PLYMOUTH ROCKS,
75 cents each.****M. B. TURKEYS,**

\$5.00 per pair.

BERKSHIRE PIGS.

\$5.00 each.

W. F. FLANAGAN, - Christiansburg, Va.

**PLYMOUTH ROCK EGGS
FOR BROILERS.**

The undersigned can furnish them in limited quantities at \$4 for 100.

F. O. B. at Claremont, Va.

J. M. HUGHES, Claremont, Surry Co., Va.

**MAMMOTH BRONZE TURKEYS
CROSSED WITH****WILD TURKEYS.**

FOR SALE BY

Mrs. J. J. FRANKLIN, - Pamplin City, Va.

FOR SALE M. B. TURKEYS, \$6.50 a trio.
PEKIN DUCKS, \$1.50 per pair.
S. C. B. LEGHORN CHICKENS.

Address

Miss CLARA L. SMITH, Croxton, Caroline Co., Va.

Pure Bred Bronze Turkeys

For sale. Some from the prize-winning stock of Madison Square Garden Show 1902. Price Cocks, \$3.00; Hens, 2.50; Pairs, \$5.00.
Mrs. W. M. S. WOODS, Ivy Depo Va.

Lion Coffee

is 16 ounces of pure coffee to the pound. Coated Coffees are only about 14 ounces of coffee and two ounces of eggs, glue, etc., of no value to you, but money in the pocket of the roaster.

The sealed package insures uniform quality and freshness.

FOR SALE!

RED POLL CATTLE,
RIDING and DRIVING HORSES
and a FEW BROOD MARES.
SHETLAND PONIES,
POLAND-CHINA HOGS,
BRONZE TURKEYS,
PEKIN DUCKS,
BARRED PLYMOUTH ROCKS,
ALBEMARLE PROLIFIC SEED
CORN.

Write for prices and breeding. No better stock to be had and nothing but good individuals shipped.

ARROWHEAD STO K FARM,

SAM'L B. WOODS, Prop. Charlottesville, Va.

DORSET SHEEP

Have the true Golden Hoof, and make Southern farmers more profit than any other stock. Write the Secretary of the Continental Dorset Club for information and lists of breeders.

JOS. E. WING, Mechanicsburg, Ohio.

DORSETS AND HEREFORDS

H. ARMSTRONG, - Lantz Mills, Va.

"WOODLAND" FARM DORSETS

We have an unusually choice and strong lot of YOUNG RAMS and will spare a FEW EWES, though we part with them unwillingly. Our delighted customers, satisfied customers, in the South are our warmest advocates. Our Dorsets make us more money and give us more pleasure than any other stock we have ever handled.

JOS. E. and WILLIS O. WING, Mechanicsburg, Ohio.

Build Your Own Incubator.
Complete Illustrated Plans and Instructions for building Incubators and Brooders by which a 200-Egg Hot Water \$8 incubator can be built for about \$8. We sell the Tanks, Lamps, Regulators, etc., at cost. Big money in building and selling Incubators; a boy can do it. Write to-day for particulars and FREE circular—How to Make and Save Money with an Incubator. EST AGENTS WANTED. POULTRY SUPPLIES AT CUT PRICES.
OHANNON SNOW & CO., Dept. 128 Quincy, Ill.

REPORTS.

U. S. Department of Agriculture, Washington, D. C. Report of the Secretary of Agriculture, 1902.

Bureau of Animal Industry. Circular 38. Foot and Mouth Disease Warning to all Owners of Cattle, Sheep and Swine.

Bureau of Chemistry. Bulletin No. 70. Manufacture of Table Syrups from Sugar Cane.

Office of Experiment Stations. Circular 48. What the Department of Agriculture is Doing for Irrigation.

Office of Experiment Stations. Experiment Station Record, Vol. XIV, Nos. 3 and 4.

Farmers' Bulletin No. 161. Practical Suggestions for Fruit Growers.

Arizona Experiment Station, Tucson, Ari. Bulletin 45. Timely Hints for Farmers.

Colorado Experiment Station, Fort Collins, Col. Bulletin 74. Swine Feeding in Colorado.

Bulletin 75. Lamb Feeding Experiments, 1900-02.

Bulletin 76. Feeding Beet Pulp to Lambs.

Louisiana Experiment Station, Baton Rouge, La. Bulletin 65. Analyses of Commercial Fertilizers.

Bulletin 66. Sugar Cane Experiments in Cultivation.

Bulletin 67. Broom Corn—How to Grow and Cure it.

Bulletin 68. Home-grown vs. Purchased Seed.

Bulletin 69. Pecans.

Bulletin 70. Cane Borer.

Bulletin 71. North Louisiana Experiment Station. Report for 1901.

Maryland Agricultural College, College Park, Md. College Quarterly, November, 1902. Short Winter Courses in Agriculture and Dairying.

Maryland Experiment Station, College Park, Md. Bulletin 86. The Influence of Preservatives Upon the Food Value of Milk.

Nebraska Experiment Station, Lincoln, Neb. Bulletin 75. Feeding Experiments with Cattle and Pigs.

New Hampshire Experiment Station, Durham, N. H. Technical Bulletin No. 4. Effect of Acetylene Gaslight on Plant Growth.

New York Experiment Station, Geneva, N. Y. A Method of Combating Rusty Spot in Cheese.

Bulletin 216. Report of Analyses of Commercial Fertilizers.

Rhode Island Experiment Station, Kingston, R. I. Bulletin 87. Fowl Typhoid.

Bulletin 88. The Forests of Rhode Island.

Bulletin 89. Commercial Fertilizers.

University of Tennessee, Knoxville, Tenn. University Record, Agricultural Year-book.

Wyoming Experiment Station, Laramie, Wyo. Bulletin 55. The Birds of Wyoming.

POTATOES \$2.50 a Bbl.

Largest growers of Seed Potatoes in America. The "Rural New Yorker" gives Salzer's Early Wisconsin a yield of 742 bu. per a. Prices dirt cheap. Mammoth seed book and sample of Teosinte, Speltz, Macaroni Wheat, 65 bu. per a., Giant Clover, etc., upon receipt of 10c postage. JOHN A. SALZER SEED CO. La Crosse, Wis.

STRAWBERRY PLANTS

Now ready for shipment: Lady Thompson, Excelsior, Klondyke, Johnsons' Michels Early at \$2 per 1,000.

Aroma, Bubach, Gandy and Brandywine \$2 1,000. Cash with order.

Send for New Catalogue of 40 varieties.

H. LIGHTFOOT, Chattanooga, Tenn.

1,000,000

CABBAGE PLANTS For Sale

Varieties: Charleston Wakefield, Brill's Early Flat Dutch. Price, cash 1.00 b. Charles-ton, \$1.25 per 1,000, \$1.00 per 1,000 above 5,000.

ALSO 500,000

GIANT ARGENTEUIL ASPARAGUS ROOTS,

1 and 2 years old, grown exclusively from imported seeds, at \$5.00 per 1,000.

ALFRED JOUANNET, Mount Pleasant, S. C.

PALMORE'S

Law and Collection Association,

Established 1884. Claims collected in all parts of the United States. No collection—no charge.

P. O. Box 503. 905½ East Main Street, RICHMOND, VIRGINIA.

THE KEELEY INSTITUTE GREENSBORO, N.C.

For the treatment of THE LIQUOR, OPIUM, MORPHINE and other Drug Addictions. The Tobacco Habit, Nerve Exhaustion

COLLIE PUPS!

By prize-winning imported sires and trained dams. Eligible. Fit for bench, ranch or farm. Price, \$10, either sex. Also a book on the care and training of the Collie for all practical uses. Price, 50c. Copy of book free to purchaser of Collie.

Stock Farm, "MAPLEONT," Albany, Ver.

FOR SALE.

SEVERAL

HARRIER-BEAGLE PUPPIES,

8 months old, well bred, good lookers, and just beginning to hunt. For particulars, apply to

A. S. CRAVEN, GREENWOOD, VA.

Registered P. Chinas Berkshire, C. Whites. Fine large strains. All ages, mated not akin, 8 week pigs. Bred sows. Service boars and Poultry. Write for prices and free circular. P. F. HAMILTON, Cochranville, Chester Co., Pa.

Telegraphy

Easy tuition. Positions secured. Free Catalogue.

T. C. TELEGRAPH SCHOOL, Dept. D, Uhrichville, O.



JACKS FOR SALE.

1 to 6 yrs. old. Fine Jacks a specialty. Write for what you want.

W. E. KNIGHT & CO.,
Nashville, Tenn.

FINE JACKS.

Mules are equal to Gold Dollars, from "youth to old age." Several nice ones and 2 very fine Jennets for sale. Buy Jack now and get him ready for spring. Write your wants to

L. L. THOMAS,
722 W. Campbell Ave., - Roanoke, Va.

150 Jacks, Jennets & Mules 150



Best assortment I ever owned. Can suit you exactly. Write for description and prices.

Also will sell two Percheron stallions at close figures.

BAKER'S JACK FARM,
Lawrence, Indiana.

KNIGHT & JETTON,

Breeders of and Dealers in

Jacks, Jennets,
Stallions.

Fine Jacks A Specialty
Write for cat.
MURFREESBORO,
TENN.



JACKS.



Raise mules and get rich. 200 large Black Spanish Jacks for sale. 14 to 16 hands high. Good ones and money makers. Cheaper now than later on. Stock guaranteed.

Also some fine large Jennets and mules.
Write for prices.

KREKLER'S JACK FARM, West Elkton, Preble Co. O.

70 EWES TO SELL, also 1 REG. DORSET BUCK.

The ewes are native grade Merinos, and bred to one of the finest registered Dorset bucks. They are all in fine condition and perfectly healthy, and none over three years old. Also 1 Registered Dorset Buck, a very fine animal.

G. E. CONNELL, M. D., IRWIN, VA.

OAK RIDGE FARM.

OAK RIDGE, NELSON, Co., VA.

As Mr. T. F. Ryan wishes to make this a stock farm with thoroughbred cattle to benefit himself as well as afford a good opportunity to all Virginians to improve their stock. I wish to say that we have

7 THOROUGHbred Red Poll Bull Calves

For sale at reasonable prices. Their ages range from 4 to 11 months old. Write or come and see them.

AD. C. RUCKER, Sup't.

Mention the *Southern Planter* when writing advertisers.

Virginia (Hampton Institute), Hampton, Va. Nature Study Leaflet, No. 7. Beautifying School Houses and Yards.

Virginia Weather Bureau, Richmond, Va. Report for November, 1902.

West Virginia Experiment Station, Morgantown, W. Va. Bulletin 83. Poultry Experiments.

West Indian Bulletin. Bridgetown, Barbados. Vol. III, No. 3.

West Indies. Agricultural News, Barbados, November 22, 1902.

The Petaluma Incubator Co., of Petaluma, California, to keep pace with the enormous growth of its business, has within the last few weeks not only completed a large three-story brick building as an addition to its factory by which the capacity has been more than doubled, but has also opened a large store and warehouse at 33 Market Street, San Francisco. The latter move was made to not only aid in the sale of Incubators and Brooders but to enable them to better handle all the various lines of goods for which they are Pacific Coast and Export agents. Mr. L. C. Byce, President of the Company, is accredited with having done more to advance the poultry interest than any man in the world, and whose personal efforts has made Petaluma and vicinity the greatest poultry raising section in the United States.

The factory and main office at Petaluma is in charge of Mr. Byce, Mr. R. C. Gray, General Manager, Mr. H. R. Campbell, Manager of Poultry Supply Department, while the Eastern House at Indianapolis, Ind., is directed by Mr. E. S. Coming, the Vice-President, and Mr. C. H. Taft, Secretary of the Company, is in charge of the San Francisco business.

"PRINCE RUPERT" COMES TO "ANNEFIELD" FARMS, BRIGGS, CLARKE COUNTY, VA.

Mr. Ed. Gay Butler, proprietor of the above farms, has just purchased and brought home the splendid Hereford bull "Prince Rupert." This bull has for the past two years been at the lead of the prize-winning herd of Mr. W. H. Curtice, Eminence, Ky. While Mr. Butler paid a pretty long price for him, we consider him fortunate in being able to secure him for his splendid breeding establishment in the Valley of Virginia. We hope to show a picture of him in our next issue and also give an extended pedigree and a record of his winnings. Look up Mr. Butler's advertisements of Berkshire and Herefords elsewhere in this issue.

Cannon Snow & Co., of Quincy, Ill., are advertising with us this issue their book of plans and instructions by which any one who is handy with tools can build an incubator of 200 egg capacity at a cost of about \$8.00. This is less than half the usual price and includes their furnishing the parts difficult to make, such as lamp, regulator, etc.

Now is a good time to begin, as the hatching season will soon be here. Write for full particulars. Address as above.

DISPERSION SALE SHORTHORNS



OWING to pressure of business engagements in other directions, which will occupy me very closely for some time to come. I have decided to disperse the ELK GARDEN HERD of Short-horn cattle, with the exception of two bulls and six or eight females. I do not care to hold an auction sale and therefore propose to offer my cattle at private treaty, either as whole or in lots to suit purchaser; preferring to close out to one buyer.

The herd now numbers about 90 head, consisting largely of straight Scotch families, such as Duchess of Gloster, Rose of Strathalian, Miss Ramsden, Mina, Lavender and other noted Scotch tribes. There are also some fine Scotch-topped and double Scotch-topped cattle founded on such valuable Bates-topped families as Young Mary, Renick Rose of Sharon, Kirkievington Duchess, etc. My Scotch families were the pick of Canada. Our younger cattle are mainly the get of Knight of the Thistle 108858, and cows now in calf to the pure Scotch bull Blood Royal 168876, a splendid yearling of the Princess Royal tribe.

The cattle are in good breeding condition, having been on grass without grain since April.

H. C. STUART,
ELK GARDEN, - RUSSELL CO., VA.

ELLERSLIE FARM

Thoroughbred Horses
AND SHORTHORN CATTLE,

Pure Southdown Sheep
and Berkshire Pigs.

FOR SALE. R. J. HANCOCK & SON,
CHARLOTTESVILLE, VA.

EAST RIVER SIDE SHORTHORNS.

Choice bull and heifer calves for sale. Will make price very low for next 60 days.

JAMES F. CLEMMER, Summerdean, Va.

"HORNLESS SHORTHORNS"

A POLLED DURHAM BULL is the Model Dehorner. A FEW CHOICE BULL CALVES of this most popular breed for sale.

J. L. HUMBERT, Charlottesville, Va.

FOR SALE at \$10 each,
Three pure-bred

ANGORA BUCKS

Price includes crating and delivery on cars at Columbia, Va., C. & O. R. R. A good flock of Angoras can be built up by using pure bucks in crossing with common does.

C. E. JONES, - Carysbrook, Va.

ANGORA GOATS are handsome, hardy and profitable. For large circular address E. W. COLE & CO., Kenton, Ohio.

BERKSHIRES

ANNEFIELD HERD

Represents the

Finest Blood Lines

In England or America.

Stock for sale at all times.

Correspondence Solicited.

Inspection Invited.

EDW. G. BUTLER, Annefield Farms.
Briggs, Clarke Co., Va.

V. P. I.

Farm Bulletin

We are offering some nice **BERKSHIRE PIGS**. Let us have your orders early. Choice stock; prompt attention.

D. O. NOURSE, Prof. of Agr.
Blacksburg, Va.

POLAND-CHINAS

Closely related to such famous hogs as Anderson's Model, Model of 97 and Hands Off. Pigs, boars, gilts and bred-sows for sale. Also some good **SHORT-HORN** bull calves and **SHROPSHIRE** sheep. Stock guaranteed as represented or money refunded.

F. DURRETT, Birdwood, Albemarle Co., Va.

CHOICE Poland China

Pigs, both sexes, 3 mos. old, not akin, for sale, sired by "CIEF B-ST" son of "TECUMSEH 2nd" and "MOORISH PERFECTION 3rd," grandson of "CHIEF PERFECTION 2nd" from "TECUMSEH BLACK U. S." and "FREE TRADE" Sows.

Reg. **PERHERON FILLY**, 3 yrs. old, in foal to line bred black Registered Brilliant Stallion—good size and style, good worker and sound.
THOS. R. SMITH, Lincoln, Loudon, Va.

Large ENGLISH BERKSHIRES M. B. TURKEYS Very Fine.

B. P. R. Chicken Eggs in season.

HAWKSLEY STOCK FARM,

J. T. OLIVER, Allen's Level, Va.

Ayrshires, Berkshires and Oxford-Downs.

Ayrshire calves of both sexes, Berkshire pigs and boar, and 2 Oxford-Down Rams For Sale.
MELROSE CASTLE FARM,
ENOS H. HESS, Manager, Casanova, Va.

THE DAIRYMAN'S TRIUMPH.

The following is from an address delivered by Mr. John Gould at the recent meeting of the New York Dairyman's Association:

The farmer of a century ago was a cypher among the industries; now he is able to buy four times over, all the other industries combined. Some single States make butter enough in one year to buy all the gold mined in the United States in twelve months. The American farmer owns 400,000,000 acres, divided into 5,700,000 deeded farms, not including ranches valued at \$16,500,000,000. His buildings are worth \$4,000,000,000; machinery, \$800,000,000; live stock, \$400,000,000. In 1900 he produced \$5,000,000,000 worth of farm produce, and has on deposit in savings and other banks of the country \$2,000,000,000, practically equal to the present money circulation of this country. On these 7,500,000 farms last year the farmer raised 91,000,000 acres corn, worth \$751,000,000; 40,000,000 acres wheat, worth \$323,000,000, while the gold and silver of the mills only yielded \$153,000,000 or \$900,000,000 less than these two crops. The cotton crop was worth \$465,000,000, and the tobacco crop far beyond \$100,000,000. The dairyman's income was \$447,000,000 more than the output of the gold and silver mines. Besides, there are 18,000,000 cows, 18,000,000 horses, 61,000,000 sheep, 62,000,000 hogs, 50,000,000 other stock—one-fourth of all the domestic animals in the world. The wool clip last year was 162,000,000 lbs.; cotton made, 9,500,000 bales. Of our surplus are exported \$844,000,000 from the farms, while from all other sources the exports amounted to \$556,000,000; in other words, for every \$100 we exported, \$68 came from the farms, making us a creditor nation.

The farmer, in addition to feeding himself with every farm food indigenous to the United States, eating 1,000,000,000 lb. of butter and 540,000,000 lbs. of cheese, sent to the various nations of the earth \$8,400 worth of farm produce for each living inhabitant of the nation. Farming from 1850 went forward with a bound. Land values doubled; villages sprang up; the whole land was covered with a network of railways. It put machinery into every department of farm work; it made a net-work of telegraph wires overhead; it sent the over-populated East flying to occupy the great prairie lands of the West; the "wild-cat" currency and "red dog" banks were driven into oblivion, and currency was made forever safe and good. This revolutionization had a beneficent effect on the dairyman who has basked in its golden sunshine ever since. His \$10 to \$15 cow became worth \$25 and \$30; his 3c. cheese—sold now green weight—for 5 and 6 cents cash—no more store pay—and he was placed in the way of invention, improvement and progress. Science and literature came to his aid, as did most profound and wise investigators and chemists. What was this force, this influence and expanding power? The discovery of gold in California. In the five years from 1849 that new province turned into the coffers of this land more

FINE STOCK AT A BARGAIN.



One eight year-old brown mare, Hackney and Trotter cross, fine driver, gentle handsome and stylish, very fast. Weight, 1,200 lbs. Price, \$175. Worth double that money on any city market.

One fine, reg. Aberdeen-Angus bull calf, six months old, very finely bred.

Nine head beautiful, reg. Angora Goats; One Buck; Price, \$20. Six Does; Price, \$12 each. Two Buck Kids; Price, \$10 each. Lump price of nine goats, \$100.

Two fine, reg. Dorset Ewe lambs, about 1 yr. old. Price, \$10, each.

One Scientific Grinding Mill, nearly new, made by Foss Manufacturing Co., Springfield, O. Price, \$25.

Address **W. M. WATKINS & SONS,**
Cottage Valley Stock Farm,
Randolph, Charlotte Co., Va.

ABERDEEN-ANGUS

Bull calves, \$40 to \$60, heifers 5 to 7 mos. old, \$75. Limited quantity

NEW SIBERIAN MILLET

Seed at \$1.50 per bus.; this millet will produce a crop of seed and a fair quality of hay at the same time. It is fully two weeks earlier than the German millet, of finer quality, but will not yield quite as much.

C. E. JONES, Carysbrook, Va.

ANGUS BULL CALVES

Registered and unrecorded. Stock first-class, and breeding the best.

SHROPSHIRE SHEEP

First class yearling rams, and ewes of all ages. Several FINE FARMS for sale.

WARREN RICE, Winchester, Va.

FOR SALE!

One Young 3/4 Guernsey Bull.

Age 2 1/4 years. Gentle; in good condition; a fine animal; weight about 1000 lbs. Also, over

20 EWES From One to Three Years Old,

From my two Registered Southdown Rams, White Knight, No. 9653, and Zeb. Vance, No. 12287, and one fine **DORSET EWE**, No. 7883, RECORDED, and a few **CROSS DORSET** and **SOUTHDOWN EWES**, from my Registered Do set Ram, No. 8066. For prices, particulars, etc., address, enclosing stamp,

L. G. JONES, Bethania, N. C.

FOR SALE.

Large English Berkshire Hogs, Barred Plymouth Rock Chickens

BEN. BOLT, 60747, 430 lbs. as a yearling at head of herd. EGGS IN SEASON.

JOHN P. FOSTER, Noreck, Ohio Co., Ky.

HEREFORD CATTLE

ANNEFIELD HERD OF REGISTERED ANIMALS

HEADED BY

Prince Rupert, No. 79539

Winner of the Grand Sweepstakes at Kansas City, 1901. Sired by the famous herd bull Beau Donald, No. 58996. Grandsire Beau Brummel, No 51817.

The herd is rich in "ANXIETY" blood, the most desirable and sought after breeding to-day. Stock for sale at all times. Inspection invited. Correspondence solicited.

EDWARD G. BUTLER, "Annefield," Briggs, Clarke Co., Va.

● FILSTON FARM. ●

SECOND LARGEST

JERSEY HERD

IN AMERICA. FOUNDED 1882.

BULL CALVES, and for the first time, Heifers bred to Imported Golden Peter, and Heifer Calves and a few aged Cows.

BERKSHIRES, all ages, sired by Imported Storm King, or Imported Esau 2nd, Size, good shape and large litters.

Visitors welcome. Address for Book of The Farm, or prices

E. M. GILLET, Clerk, Glencoe, Md.

ASA B. GARDINER, Jr., Manager

Swift Creek Stock and Dairy Farm



Has for sale a large number of nice young registered A. J. C. C.

JERSEY BULLS AND HEIFERS.

None better bred in the South. Combining closely the most noted and up-to-date blood in America. Bulls 10 to 12 months old, \$25.00 Heifers, same age, \$35.00. POLAND-CHINA PIGS, \$5.00 each. Send check and get what you want.

T. P. BRASWELL, Prop., Battleboro, N. C.

FOR SALE—Special Bargain in Reg. HOLSTEIN-FRIESIAN BULL.

To a void in-breeding, I will sell Lord Fitch, No. 22685, H. F. H. B.

W. W. HARPER, - ORANGE, VA.

than \$270,000,000 in gold, and on its strength the nation took on a new lease of life. From that day we ceased to be a people of barter and exchange, and became one of cash on delivery. It was the dairyman's first triumph! After 1852 the dairy became an industry; before, it was a struggle. Even in the fierce war of '61 came the cheese factory. Hardly a State to-day but has its Dairy Association, and the best statistics place the number of milch cows at 18,500,000, the income from these dairies being approximately \$600,000,000—double that of any other farm industry.

The dairyman and his brother farmer have possessed the land of this country and covered it with their flocks and herds and increased the producing power of the soil four-fold, so that while in 1850 they had only \$500,000,000 worth of live stock, in 1900 they were valued at \$4,000,000,000. This has forced the semi-dairy farmer to market surplus abroad, so that last year of our surplus we supplied nearly 30 per cent. of the meat and 18 per cent. of the grain Europe consumed outside of Russia.

Dairying has become a science and art. Not a practice of 50 years ago now exists in the dairy, save hand milking. Four distinct lines of dairy breeds have been made prominent in our dairying, while 10,000 dairymen have mixed all the breeds together and produced the general purpose cow, whose purpose is to eat all she can lay lip to and give in return as little, aside from her company, as possible.

It is computed that we are now pro-

READERS OF THE PLANTER

In want of a PIANO will find it to their interest to write to us. We assure them there is such a thing as buying an honestly made instrument at a moderate price.

We make CASH and TIME SALES, and are willing to take part payment in Stock and Farm Products.

Write and state your wishes.

F. W. WALTER & SON,
STAUNTON, VA.

FOR SALE.

JERSEY BULL.

A. J. C. C. Emperor Nero, No. 54171.

LEGHORNS, White, S. C. Brown, R. C. Brown.

WYANDOTTE COCKERELS. Price, \$1.00 per head, three for \$2.50.

Address

J. B. JOHNSON, Clover Hill Farm, Manassas Va.

RUPTURE CURED while you work. You pay \$4 when cured. No cure, no pay. ALEX SPEIRS, Box 84, Westbrook, Maine

Mention the Southern Planter when corresponding with advertisers.

BILTMORE FARMS, BILTMORE, N. C.

Poultry Yards Department.

More than 50 matings of prize-winning standard birds from which we will ship a certain number of sittings. WRITE FOR SPECIAL EGG CIRCULAR.

Plymouth Rocks,
White and Barred.

Wyandottes,
Golden, Silver and White.

Leghorns,
S. C. White and Brown and R. C. White

Toulouse Geese,

Light Brahmas,

Black Langshans,

Black Minorcas,

M. Bronze Turkeys,

Buff Cochins,

Pekin Ducks,

Cor'sh Indian Games

W. Holland Turkeys.

WE ARE FOR 1903

On a larger scale than ever.

Sending out better birds at more reasonable prices.

More than ever anxious to please customers.

OUR YEARLY SALES for the last three years have nearly doubled themselves each year over that of the preceding year.

BILTMORE FARMS, - BILTMORE, N. C.

Headquarters for GOLDEN LAD JERSEYS,

Also get of TREVARTH and GEN. MARIGOLD. ❀ ❀ ❀

GOLDEN LAD'S SUCCESSOR, First and sweepstakes over all at the Pan-American Exposition, the champion JERSEY BULL OF AMERICA, and out of Golden Ora, our great prize-winning cow, both born and developed on these Farms, is among our service bulls.

Biltmore Jerseys are a combination of large and persistent milking qualities with an individuality that wins in the show ring.

SPECIALTY. Write for descriptive circular of the best lot of young bull calves ever offered, both for breeding and individuality. They are by noted sires and out of large and tested selected dams. Many of these calves are fit to show and win in any company.



BILTMORE POULTRY YARDS.



SPECIALTY. Write for descriptive circular of eggs from our prize-winning pens. Over 50 yards to select from, made up of the winners at the leading shows for the last two seasons. If you want winners you must breed from winners.

Headquarters for the best IMPORTED ENGLISH BERKSHIRES.

APPLY TO **BILTMORE FARMS, BILTMORE, N. C.**

Third Annual Brood Sow Sale,

FEBRUARY 3, 1903.

BILTMORE FARMS

The demand for Biltmore Berkshires during the last year has made it almost impossible to reserve a sufficient number of high class individuals to make up a sale list. Therefore we decided rather than disappoint the many breeders that yearly select foundation stock and out-crosses from these offerings, to make a special importation for this sale.

This IMPORTATION represented nearly a month hunt over the whole of England, and we would willingly retain the larger part of the sows, but realize that this is impossible without hurting the sale.

All are choicely bred and guaranteed safe in pig; and moreover, this will probably be the last chance to select from so many Imported animals, as we hope next year to confine the sale to sows of our own breeding.

The entire importation of 65 head will be sold without reserve.

They are the tops representing our first choice from the most successful English breeders.

English Live Stock Papers say "this is the choicest, largest and most costly purchase of Berkshires that has ever left England."

All guaranteed safe in pig to such great boars as Loyal Berks, The Duke Imported, Royal Carlisle (First Prize at the English Royal Show), Manor Faithful, etc.

Every Sow either sired by, out of, or a producer of WINNERS.

Take a Winter Tourist's Ticket at $1\frac{1}{2}$ fare for the round trip, to Asheville. Money refunded to all purchasers of \$125.00 worth of stock or more. If you cannot come send a mail bid to the Farms, or write for Mr. W. R. Harvey, one of the most noted expert judges of America, who will be present in person, to select you, in his opinion, one of the best bargains of the sale within a certain limit.

CATALOGUES OUT SHORTLY AFTER JANUARY 1st.

ducing 1,400,000,000 lb. of butter annually, and about 500,000,000 lb. of cheese, in addition to the milk trade, and are exporting practically nothing, while even in 1880 we sent abroad 127,000,000 lb. of cheese and 40,000,900 lb. of butter. Why this change? Because, with education and skill, with cold storage and better ways of handling, we are now making our butter and cheese so much finer that we are consuming it at home and saving freight and commission. It is safe to predict that we shall soon be importing no inconsiderable proportion of the butter and cheese we consume. At present, no market in Europe can pay Jamestown prices for these commodities.

To the dairyman, new influences outside of the dairy are coming to help him and make his country life one of higher attainments. The dairying of the whole country is in a rapid state of transition, not only in labor but in profit. The dairyman has now rural mail delivery, the telephone, the trolley; and, better and grander than all, with far wider-reaching influences, is the centralized country school, that gives the dairyman's boy and girl the best English education at their own homes and associated with home and rural influences—the very thing which makes for national morality and loyal citizenship, the stability that shifts the balance in our oft-rocking ship of State, and again puts her on her course with level keel.

VERIFIES THE CLAIM.

WYTHEVILLE, VA., Feb. 1, 1902.

Newton's Heave and Distemper Cure is the best medicine I ever had in my stable. It does exactly what you claim. Others here say the same thing.

Yours respectfully,

M. M. SUTHERLAND,
Dealer in Horses.

GRIND YOUR FEED.

We need not urge upon our readers again the importance of grinding feed for live stock. All farmers recognize its economy. We do want to urge, however, the importance of getting a good grinder of your own, and desire to call especial attention to the offer of G. M. Ditto, of Joliet, Ill., to send one of his triple geared, ball bearing grinders to any responsible farmer on approval. You can try it before you buy it. The Ditto Mill is well and favorably known throughout the country, and we believe our readers will be interested in the attractive literature Mr. Ditto sends out.

PRIZE WINNINGS

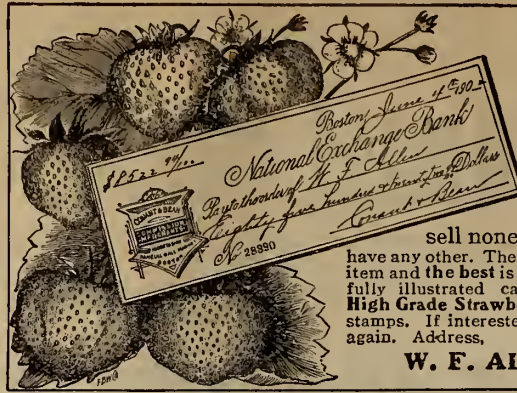
AT RICHMOND SHOW 1902

I received 1st on pen, 1st on hen, 1st and 2nd on pullets, 3rd on cockerel. Choice cockerels, \$2 to \$5. Hens and pullets, \$2 to \$5. Write me your wants, I can please you. Eggs \$2 per 15 in season.

C. G. M. FINK, 1409 W. Leigh St., Richmond, Va.

WE PAY \$26 A WEEK And expenses to come with rigs to introduce Poultry Compound.
INTERNATIONAL M'F'G. CO., Parsons, Kan.

\$24 WEEKLY Paid to collect and solicit near home. BULLOCK'S LEGAL BUREAU, Indianapolis, Ind.



THIS CHECK

and several smaller ones

I received the past season for **Strawberries** (not plants). That was because I have only the best. It pays to get the best. I

sell none but the best. I can't afford to have any other. The cost of plants is comparatively a small item and the best is none too good. I will send my beautifully illustrated catalogue with lithographed covers of **High Grade Strawberry Plants** by return mail for two 2c stamps. If interested send to-day. This will not appear again. Address,

W. F. ALLEN, Salisbury, Md.

SUNNY HOME HERD OF ABERDEEN-ANGUS CATTLE.

—SIRES IN SERVICE—

EULALIES LADDIE 41861 assisted by BARON ROSEBERRY,
The WESTERTOWN ROSE son of GAY BLACKBIRD (the sire of Gay Lad).

Most of the leading families of the breed—Coquett. Queen Mother, Westertown Rose, Rose of Adno, Nosegay, Violets etc.—sired by such noted bulls as Gay Blackbird, Ermoor 18171, by Royal Erie; Eulalies Erie 15568, by Heather Lad 2nd; Bean Bill 18637; Baron Ida 20184; Dark Prince 30638.

Quality combined with best of breeding, our motto.

No fancy prices, but business cattle at business prices.

Write for what you want.

A. L. FRENCH, PROPRIETOR, FITZGERALD, N. C.
Rockingham Co., 24 miles south-west of Danville, Va., on D. & W. Ry.

* GLEN ALLEN HERD OF *

..ABERDEEN-ANGUS CATTLE..

Headed by ALLENHURST KING IV 47199,

Assisted by VICTOR G., No. 37693.

I am now offering for sale a few choice young bulls of serviceable age, at a bargain. Any one wanting bulls from prize-winning families at a moderate price, will save time and money by calling on or addressing

GLEN ALLEN STOCK FARM, W. P. ALLEN, Prop., Walnut Hill, Va.

* VIRGINIA DIVISION. *

Farmers Mutual Benefit Association.

A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.

Insures, against Fire and Lightning, only country property—no stores or unsafe risks. Average cost per year for three years has been \$3.66½ per \$1000, including dwellings, barns, produce, &c.,—about one-third the usual cost of insurance to farmers. Amount of property insured \$325,000. Estimated security in real and other estate, \$600,000.

For further information, address,

CHAS N FRIEND, General Agent
CHESTER, VIRGINIA

MENTION THIS JOURNAL.



Ruby King Radish.

in open garden. Top small and flesh is tender, juicy and mild. Color rich scarlet.

The Ideal Radish for either Gardener or Amateur.

Six ounces will plant a 100 yard row. Write for our FREE illustrated catalogue, describing full line of Rocky Ford Cantaloupe, Alaska Peas, Valentine Beans, Grand Peas, Field and Garden Seed, Bulbs and Plants.

Write now. J. Bolgiano & Son, Dept. P 5, Baltimore, Md.



No. 1 Iron Age
Double and Single
Wheel Hoe.

No. 6 Iron Age
Combined
Double and Single
Wheel Hoe, Hill
and Drill Seeder.

No. 1 Iron Age
Combined Harrow
and Cultivator.

Improved-Hobbin
Potato Planter.



Look for the full name IRON AGE branded on the tool.

Don't be imposed upon by dealers selling implements made in imitation of the famous Iron Age brand. All the **IRON AGE** tools are **MARKED WITH THE FULL NAME**. The name is for your protection. It is a guarantee of best materials, best ideas, best workmanship, and all the merits that have made Iron Age tools popular with three generations of farmers and gardeners. Write for a **FREE** copy of the **NEW IRON AGE BOOK**, telling all about these marvelous labor savers, and giving prices on Cultivators, Horse Hoes, Seed Drills, Wheel Hoes, Riding Cultivators, the Improved-Robbins Potato Planter, &c.

BATEMAN MFG. CO., Box 167, Grenloch, N. J.

BOOKS AND PAMPHLETS.
A B C of Bee Culture. A Cyclopaedia of Everything Pertaining to the Care of the Honey Bee. By A. I. Root. Revised by E. R. Root.
 We have lately received the 1903 edition of the **A B C of Bee Culture**, an illustrated encyclopedia devoted entirely to the subject of bees. To all who are interested, or those who want to know more about bees, we are sure that this book will be a real help, and we are glad to recommend it as being many times worth its cost. Price, \$1.20, postpaid. It can be obtained from the publishers, The A. I. Root Co., Medina, Ohio, or we can supply it at the publisher's price.

Ginseng. Its cultivation, harvesting, marketing and market value, with a short account of its history and botany. Revised, greatly enlarged and brought down to date. Illustrated, 144 pages, 5x7 inches. Cloth. Price, postpaid, 50 cents. Orange Judd Company, New York.

The impetus given to the American Ginseng industry, through the appearance of the first edition of the book, has been almost phenomenal. Ginseng growing has made such rapid strides and the demand for information has increased so greatly that a second and extended edition has become necessary. The information contained in the present volume, which is nearly three times as large as the first, has been culled from a large mass of material and is, decidedly, the best that has appeared since ginseng culture first attracted attention in America. Every detail bearing upon successful ginseng growing is fully and minutely elaborated; and the author is confident that ginseng culture will grow in proportion to the application of intelligence to it. To any one intending to embark into this industry this book must prove invaluable. We can supply the book at the publisher's price.

Coffee Planting, a short treatise compiled with special reference to the conditions of culture in Cuba and Porto Rico. By Joseph Hillman. Published by Wm. S. Myers, Director Chilian Nitrate Propaganda (nitrate of soda), 12 John street, New York.

Mention the *Southern Planter* when corresponding with advertisers.

SIR JOHN BULL'S PIGS.

All testify to his prepotency, nor is

UNCLE SAM

Unlike him in strong points of transmission or reproduction.



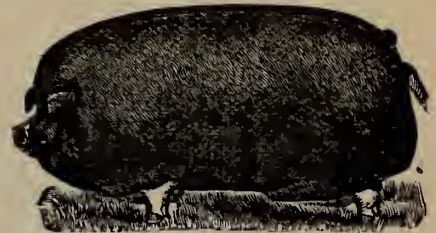
Every pig I ship has individual merit, aside from the purest English strain of **LARGE BERKSHIRES** that I could import from the most famous breeder in England.

LET ME HAVE YOUR ORDERS PROMPTLY FOR FALL SHIPMENT, at Farmers' Prices.

HUNTING DOGS and PUPS FOR SALE.

THOS. S. WHITE, Fassifern Stock Farm, Lexington, Va.

POLAND-CHINAS.



TECUMSEH G. 49283.

Have sold out all pigs on hand and am now booking orders for pigs from my spring litters. Have a limited number of **YOUNG SOWS** in pig **FOR SALE.** Address

J. B. GRAY, FREDERICKSBURG, VA.

FOR SALE—Three Finely Bred

BERKSHIRE BOAR

PIGS; ready the latter part of January.

FOREST HOME FARM, Purcellville, Va.

NO POETRY IN CATTLE BUSINESS.

"The cattle business does not offer opportunities for poetry now," said a sunburned Westerner to his Wall St. friend the other day. The two men were taking luncheon together at a downtown restaurant, and as the waiter spread the cloth the city man remarked:

"What could a poet ever do out in your wild West, except be a tenderfoot and an easy mark, as we say now-a-days?"

"Well, what I meant was that ranching is not such a romantic and picturesque business now as some writers paint it," was the reply. "There was a time, before I was baldheaded, about thirty years ago, or perhaps less, when the cattlemen had no fences to their pasture grounds. They simply branded their cattle, and once a year they went out and rounded them up. Each man then singled out the cattle of his mark, and then came a long drive to the railroad. These early ranchers thought that they owned the prairies by divine right.

"About fifteen years ago a change came. Hundreds of thousands of emigrants came pouring in, the great majority of whom were from Scandinavian countries. The opening up of the Indian lands of Oklahoma and its division into smaller farms took away many a hundred square mile from the old pasture lands. At the present time a cattle-raiser must fence in his property, own it or lease it, and by irrigation get as much vegetation out of it as possible. His cattle are carried away from his barns by express trains, in refrigerating cars, and everything is systematized as in a department store."

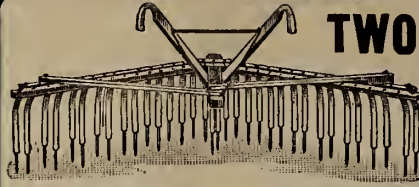
"Well, I shouldn't think a poet could get very fervid over refrigerated beef," was the answer, as the Wall St. man drank a glass of iced spring water.

UNDERGROUND WATER.

In the Eastern part of the country the value and extent of underground waters are illustrated by the enormous quantity used in the city of Savannah, Ga. In 1888, the entire supply of the city was drawn from wells yielding 5,850,000 gallons a day, a total for the year of 2,135,842,000 gallons. In the course of time, this supply somewhat diminished, and it was suspected that the flow was obstructed in its entrance to the wells. The pipes were accordingly flushed by forcing into them water under high pressure, and the flow was markedly improved.

The study of underground water in its relation to the effective water supply of the country is one of the most important departments of the work of the United States Geological Survey. It is carried on in the arid regions, where water for irrigation is of the greatest value; in the Middle West, where grazing and successful farming largely depend on it, and in the East, where an unpolluted supply for domestic and municipal use is yearly becoming a more serious problem.

One of the greatest triumphs for an ambitious young man is to learn to be contented, to be satisfied with doing a good honest day's work; to be contented to live humbly, if necessary, while his neighbors roll in wealth.—*Success*.



TWO CROP ESSENTIALS

are cultivation and keeping down weeds. More important than deep cultivation is keeping the surface stirred, breaking the crust due to rains, and allowing the light, air, moisture and warmth to penetrate quickly to the roots of the growing plant. For doing just these things the ideal implement is the

KEYSTONE Adjustable Weeder and Shallow Cultivator.

It kills the weeds at first showing, the top soil is pulverized and kept mellow, the plant roots are not disturbed and the moist soil is not brought up to dry in the sun. Adjustable in width. Narrows to 30 inches, widens to 7½ feet. Strong, runs steady, no cumbersome shafts. Furnished either with round teeth or with flat to suit different soils, as we are licensed by the Hallock Weeder Company to use their famous flat teeth. Weeder booklet mailed free. We also make 10 styles Corn Planters, 12 styles Cultivators, 20 styles Corn Shelters, hand and power, Harrows, Field Rollers, Feed Cutters, etc. Write for catalogue C.

KEYSTONE FARM MACHINE CO., 1554 N. Beaver St., York, Pa.

EUREKA MOWER CO.
MANUFACTURERS OF
**MOWERS, CULTIVATORS,
CORN PLANTERS, POTATO PLANTERS,
WEEDERS,**
And other Implements. Send for Catalogue and Prices.
UTICA, N. Y., U. S. A.

A Perfect Weeder

in all soils, under all conditions. The all important feature of flexibility of teeth is near perfection in the **YORK IMPROVED**. Made of square spring steel with round points, and set staggered in strong but flexible angle steel frame. Wide clearance, no clogging, teeth too strong to break. Multiplies producing qualities of soil and does not whip or bruise growing plant. Adjustable handles and shafts. Write for free descriptive circular.

Spangler Manufacturing Co., 501 Queen Street, York, Pa.



CISMONT DORSETS..

CISMONT STOCK FARM offers well developed young Dorsets of the best blood of England and America.

Prices reasonable.

G. S. LINDENKOHL, Keswick, Albemarle Co., Va.

HOLSTEINS THAT PAY.

Purchasers are offered selections from our herd, both male and female; our cows are of the leading strains, including De Kols, Pauline Pauls, Mechthildes, Hengervelds, Netherands, Aggies, etc., etc. They are all well bred and milking from 40 to 65 lbs. per day. Herd headed by Ury ALWINA Count Paul De Kol and DeKol 29 Butter Boy 3rd No. 2.

THOS. FASSITT & SONS, Ury Stock Farm, Sylmar, Md.

THE BUCHER & GIBBS PLOW CO.,

CANTON, OHIO.

TELL YOU SIR
THE "IMPERIAL"
IS THE BEST PLOW IN THE WORLD
NOW I TAKE AND YOU KNOW IT.

MADE AT

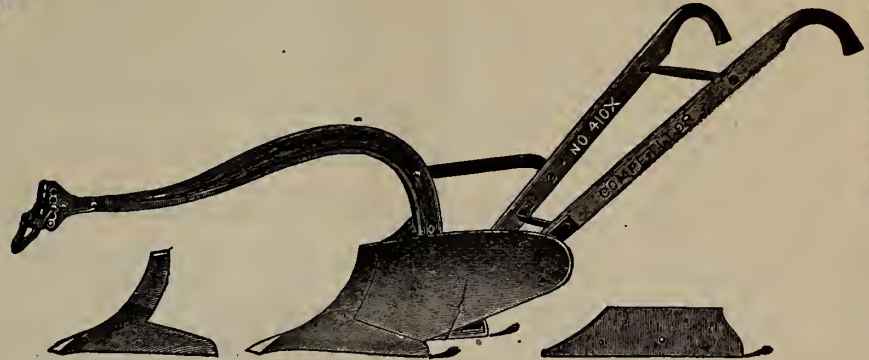
CANTON,
OHIO.



MANUFACTURE A FULL LINE OF
PLOWS in all sizes; SPIKE-TOOTH, SPRING-
TOOTH and DISC HARROWS; ONE-HORSE
CULTIVATORS, and LAND ROLLERS.

This popular Plow is
made strong and durable.
Gives satisfaction to the
farmer.

Our full line of goods for
sale by



THE IMPLEMENT COMPANY,

Catalogue Free.

General Agents, 1302-1304 E. Main St., RICHMOND, VA.

..THE..

Cardwell Machine Co.,

Cary and 19th Sts., Richmond, Va.,

..MANUFACTURERS..

AGRICULTURAL IMPLEMENTS AND MACHINERY.

THRESHERS, HORSE POWERS, CORN PLANTERS, CORN
SHELLERS, SMITH WELL FIXTURES, GENUINE
SMITH STRAW CUTTERS, PEANUT MA-
CHINERY, BALING PRESSES.

**Tobacco Machinery, Trucks, Screws, Elevators, Hand and Power, for
Stores, Factories and Warehouses.**

Successors to J W. CARDWELL & CO. and H. M. SMITH & CO.

WHAT WOMEN CAN DO FOR THE PUBLIC SCHOOLS.

You can first visit the school and see that the house is clean before the session opens; that there are enough seats and hooks, or nails, for hats, wraps and lunch baskets; that there are a pail for water, drinking vessels, basin, towels and soap; that the yard is clean, and some shrubs and trees planted, with vines to screen out-buildings. If the yard is muddy, and especially if it be the red mud, be sure to have a walk made, and a few boards will help a great deal. Place on the walls one or more good pictures. Copies of the world's master pieces can be had for a penny each, and large pictures for from five to twenty five cents each. But do not degrade the school-room by filling it with trash; better a perfectly bare room than one filled with tawdry decorations covered with dust. Start a library.

I have been in many comfortable homes where the only books were a few old school-books, the Bible, and the Almanac, and it is no wonder that we have suffered at the hands of the historians when this is true. Help the teacher by aiding in and arranging for social evenings and entertainments at the school-house. Visit the school and interest others in doing so. The women of the State can do for the school-houses a work similar to that which they have done for every church, and the hopes of all good women will be realized just in proportion to the rational development and the steady progress of the civilizing work of churches and schools.—Mrs. C. D. McIver in an Address to North Carolina Federation of Women's Clubs.

LATEST GOVERNMENT MAPS OF NORTH CAROLINA.

Two excellent maps of portions of North Carolina have recently come from the press of the United States Geological Survey. One of them, that of the Williamston quadrangle, shows a section of Bertie, Martin and Pitt counties and that portion of Roanoke Valley between Hamilton and Williamston. The other, that of the Cranberry quadrangle, shows the extreme northwestern portion of the State in the heart of the Blue Ridge, and includes portions of Mitchell, Caldwell, Watauga, Ashe and Wilkes counties, N. C., and of Carter and Johnson counties, Tenn. Grandfather Mountain, with an elevation of 5,964 feet, is the highest represented on the sheet, but many others are seen to reach the 5,000-foot elevation.

Both these maps are unusually accurate in detail, showing all roads and trails and even indicating the locations of dwellings in the country districts. They employ contours, or lines of equal elevation, to indicate the topography, which gives vivid impressions of the shapes and slopes of hills and mountains, and especially in the Cranberry quadrangle.

INNOVATION.

It was Communion Sunday in a church where little Dorothy had never before attended. On the way home she said to her mother:

"Well, mamma, that is the first church I ever was in where they served refreshments."—*January Lippincott's Magazine.*

ORDER EARLY

If you want to get a new buggy and want to have it made to your order you should send for the mammoth catalogue of our

SPLIT HICKORY VEHICLES

at once. It will tell you about our 100 exclusive styles of vehicles made of second growth Split Hickory—split, not sawed—any of which will be made as you want in **30 DAYS' FREE TRIAL** and sent you on returnable after trial if not just as you expected. We have satisfied thousands and can satisfy you.

Our SPLIT HICKORY SPECIAL at \$47⁵⁰

is the biggest buggy bargain in the world. Described in full in our catalogue. Send for that catalogue before you lay down this paper.

OHIO CARRIAGE MFG. CO., Station 41 Cincinnati, O.



CASTALIA HEREFORDS...

The breeding cows and herd bulls at "Castalia" have been selected with one aim; **THE BEST, REGARDLESS TO COST.** Herd headed by the \$3,000.00 Imported **SALISBURY**, assisted by **LARS, JR.** I have now for sale a very fine bunch of bull calves by these bulls, also a few females. Visitors are welcome and met at station.

Write your needs.

MURRAY BOOCOCK,

Keswick, Va.



BACON HALL FARM.

HEREFORD REGISTERED CATTLE

"TOP" BREEDING, CALVES NOT AKIN.

MOTTO—Satisfaction or no Sale.

E. M. GILLET & SON, - **Glencoe, Maryland.**

C. C. Taliaferro,
NASONS,
VA.
1902

"MOUNT SHARON STOCK FARM."

Reg. and Grade HEREFORD CATTLE
Reg. and Grade BRONZE TURKEYS
Reg. and Grade MUSCOVY DUCKS
Reg. and Grade SHROPSHIRE SHEEP
Reg. and Grade POLAND-CHINA PIGS.

NOW OFFERS FOR SALE




HEREFORD CATTLE.—Calves, entitled to registration, \$75 to \$100. Grade Calves by "Ed Edward" \$25 to \$40.

SHROPSHIRE SHEEP.—Bucks, one year old and over, \$15 to \$20. Buck Lambs, July delivery, \$10. and \$12. Ewe Lambs, July delivery, \$8. and \$10.

POLAND-CHINA HOGS.—Pigs, six weeks old, \$5. Pigs, two or three months old, \$7.50. Pigs, five months and over, \$15 to \$20.

M. BRONZE TURKEYS.—Toms, \$4. Hens, \$3. Eggs, per sitting of 12, when in season, \$4.

MUSCOVY DUCKS.—Pure White Drakes, \$1.25. Pure White Ducks, \$1. Pairs, \$2.25; trios, \$3.

BARRED PLYMOUTH ROCKS.

ROUEN GESE.—Ganders, \$2.50. Geese, \$2.50. Eggs, per sitting, \$3.00

WILLIAM L, Jr., No. 21068, half brother of Axtell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.

SHELBURNE'S

Is the BEST WAREHOUSE

in Richmond, the BEST MARKET for all grades of Tobacco. It is the home of sun and air cured Tobacco and headquarters for flue-cured and shipping types. Here are located the head offices and stemmeries of all the large corporations, Regie representatives and the largest number of independent factories and buyers in the United States.

SHELBURNE'S WAREHOUSE

Has the largest lighted space, insuring equal attention to every pile. Ample accommodations in every way for all our customers.

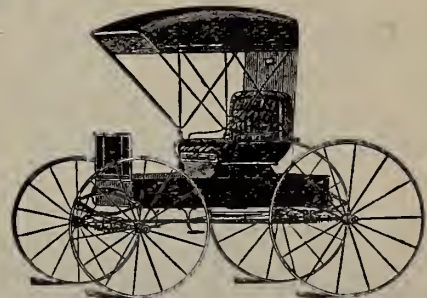
Correspondence solicited.

SILAS SHELBURNE & SON, Props., 12th and Canal Sts., RICHMOND, VA.

WAGONS and BUGGIES



MADE
RIGHT HERE
AT HOME
-BY-



The BARBOUR BUGGY CO.,
The HUGHES BUGGY CO.,
The VIRGINIA WAGON CO.

All of Virginia.

These vehicles are guaranteed to be as good as can be bought elsewhere; material and workmanship unsurpassed; all sizes and styles, prices low. We can save you time, money and freight by purchasing our vehicles. Send for our illustrated catalogues. Drop in our warehouse and inspect our stock. Inquiries cheerfully answered.

RICHMOND BUGGY & WAGON CO., 1433 E. Main Street, RICHMOND, VA.

J. T. DUNN, Manager.

A RELIABLE SEED HOUSE.

We trust that none of our readers will overlook the seed advertisement of the Griffith & Turner Company of Baltimore, Md., which is running in our columns. We believe it contains a suggestion which cannot but be helpful in selecting seeds for the new crop. Aside from the imperative necessity of changing seeds from time to time, bringing something new to the same old soil which constitutes the farmers' plant for a generation, it must appeal to every one as being the wise thing to procure the seed from that particular region of country where that particular kind of seed reaches its highest development. Right here is where the Griffith & Turner people come in. They make a study of seeds and seed-growing in connection with climate and from the region there any particular kind reaches its best form, in that region they grow and bring their supply to their Baltimore house, and are thus enabled to furnish to patrons in any part of the country what is certain to be the most profitable seeds to plant. This policy has been a most advantageous one to the company, resulting in recent years in a most rapid extension of their trade, particularly through the Northern regions. The firm is perfectly reliable and painstaking. Any one writing for their catalogue, which is mailed free, may rest assured that he is about to deal with a firm whose chief concern is to supply seeds which will produce the very best results.

Every boy born in the world should be put in the way of maintaining himself in honest independence. No education that does not make this its first aim is worth anything at all. The being able to do something is of infinitely more value than the ability to answer questions.

More and more is it coming to be seen that the industrial hope of the South is in a wider dissemination of scientific, technical and manual education, in making universal, so far as may be, that knowledge of the forces of mechanics that will lead to the development and mastery of the material resources that still lie slumbering in the depths of our hills and fields and forests—this is the supreme need of our impoverished Southland.—*Prof. C. C. Thach, of Alabama Polytechnic Institute.*

THE WORST PUNISHMENT.

"De punishment what Dives—de rich man—got down yonder is wusser than fire," said the colored preacher.

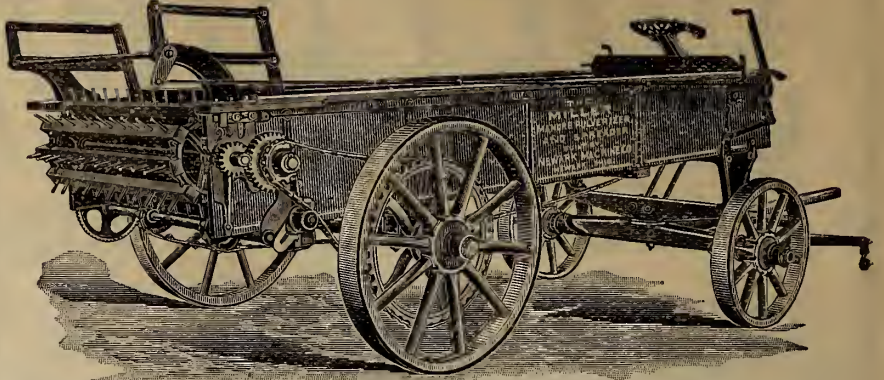
"How come dat, parson," asked a member of his flock.

"Disapp'intment," was the reply. "Ever' time he hear a rumblin' noise overhead, he 'low ter hisse'f it's thunder en it's fixin' ter rain en ter put de fire out; but Satan des chuckle ter hisse'f, en say ter 'im: 'Brace up, ole man!—dat ain't no thunder; it's only yo' frien' Latherus snorin' on Abraham's buzzum.'"—*Atlanta Constitution.*

A NEAT BINDER for your back numbers can be had for 25 cents. Address the Business Office.

The Miller MANURE SPREADER and PULVERIZER

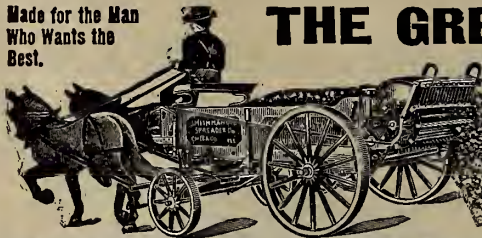
Is a machine every farmer should have. It will **SAVE YOU** its cost in a short while. **IT MAKES FRIENDS WHEREVER SOLD.**



Agents wanted.
Write for catalogue.

THE NEWARK MACHINE CO., - Newark, Ohio.
Mention the *SOUTHERN PLANTER* when you write.

Made for the Man
Who Wants the
Best.



THE GREAT WESTERN Manure Spreader

is the only Spreader **ENDLESS APRON** and made that has an **ENDLESS APRON** and the many advantages which it possesses. It's always in place and ready to receive the load without any turning back either by hand or complicated, easily broken machinery. The front and rear axles are of same length which, with the

Broad Tires Prevents Rutting

of fields, meadows, etc. and makes

LIGHT DRAFT. SPREADS ALL KINDS OF MANURE, wet, dry, frozen, light, chaffy, packed or caked. Spreads lime, plaster, wood ashes, cotton-seed and hulls, etc. Can be changed instantly to spread thick or thin while the machine is in motion—3 to 25 loads per acre. **END GATE AND BEATER AND HOOD PROTECTOR IN USE.** Made of best material in every way and sold under a **POSITIVE GUARANTEE** as to quality, capacity and durability. All parts breaking within one year will be replaced without charge. Write for free illustrated and Descriptive Catalogue—the best and most complete spreader catalog ever published.

SMITH MANURE SPREADER CO., 59 N. JEFFERSON STREET, CHICAGO, ILL.

JERSEY AND GUERNSEY CATTLE

Berkshire Hogs, young boars ready for service, and Pigs in pairs or trios not akin. Large, young Bronze Turkeys. A few Plymouth Rock and Brown Leghorn Fowls. All the above stock ready for shipment now.

A FEW BEAUTIFUL FOX TERRIER PUPPIES AT \$5 EACH.

M. B. ROWE, - FREDERICKSBURG, VA.

BLACK-LEG-INE

Pasteur Blackleg Vaccine ready for use. EACH DOSE SEPARATE.

Single Blacklegine (for common stock): 10 dose box, \$1.50; 20 dose box, \$2.50; 50 dose box, \$6.00. Double Blacklegine (for choice stock) \$2.00 for 10 doses, first lymph and second lymph inclusive. Blacklegine Outfit for applying Blacklegine, 50 cents.

Pasteur Vaccine Co.,

CHICAGO - NEW YORK - FT. WORTH - SAN FRANCISCO.

AGRICULTURAL CHEMICALS AND FERTILIZERS.

The ammoniate market is steady and firm. Continued inquiries from the South are being reported, but the business as yet has not developed very large proportions. Nitrates are inclined to be stiff, but quotations are generally unchanged. The demand for fish scrap and dried blood continues active, while the supply is not large.

AMMONIATES.

Nitrate of soda, spot, per 100 lbs....	\$2 05
Nitrate of soda, futures, 100 lbs....	1 95
Cottonseed meal, ton, c. i. f. N. Y..	28 00
Sulph. ammonia, spot	3 00
Sulph. ammonia, shipment	2 97½
Dried blood, New York grades....	2 47½
Dried blood, Western, high grade, fine ground	2 60
Fish scrap, at New York	2 55 & 10c.
Tankage, per unit	2 60 & 10c.

PHOSPHATES.

Acid phosphate, per unit	60
Bone black, spot, per ton.....	17 00
Ground bone, per ton.....	23 50
S. C. phosphate rock, ground, per 2,000 lbs.....	5 50
S. C. phosphate rock, undried, f. o. b. Ashley River, 2,400 lbs.....	3 25
do. do. do. dried..	3 50
Florida, high grade phosphate rock, f. o. b. Fernandina, per ton	7 60
Florida land pebble phosphate rock, f. o. b. Fernandina, per ton.....	4 50
Tennessee phosphate, f. o. b. Mt. Pleasant, domestic.....	3 50
do. do. do. foliage..	4 00

POTASH.

Kainit, future shipment, per ton..	3 05
Keiseret, future shipment, per ton,	7 50
Mur. potash, 80 p.c., future shipm't	1 80
Double manure salt (48a49 per cent. less than 2½ per cent. chlorine), shipment, per lb.....	1 00
Basis 48 per ct.	
High grade manure salt (90a93 per cent. sulphate potash) shipment,	2 09
Basis 90 per ct.	
Manure salt in bulk, 20 per cent. per unit, O. F.....	64
— <i>Journal of Commerce (N. Y.) Dec. 29, '02.</i> [Only highest prices quoted.—S. P.]	

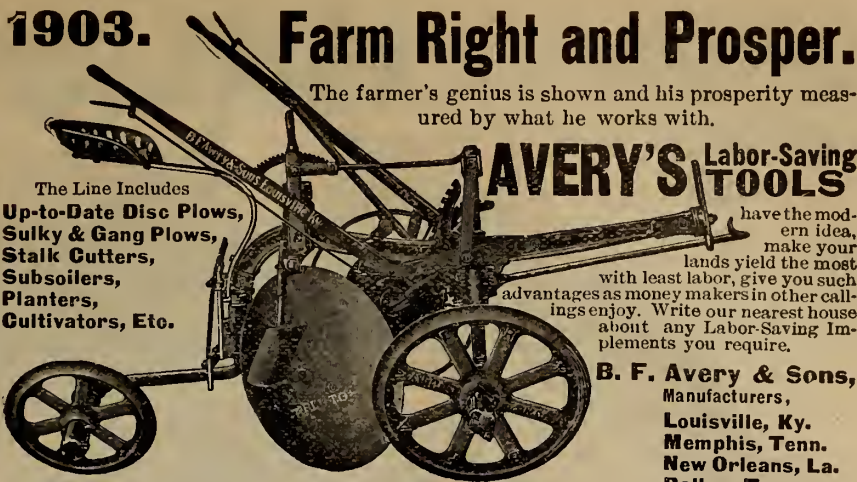
THE GROWING WHEAT CROP.

On December 4, it was pointed out that while most of the recognized private authorities were indicating a wheat acreage smaller than last year, the actual area was probably not much short of that seeded last year, and much larger than that harvested. The report of the Department of Agriculture, issued on the 10th, more than confirms this position, it placing the acreage seeded at 34,000,000 acres, against 32,000,000 seeded last year, and 27,000,000 harvested. This actual increase in breadth comes as a surprise and is at variance with all other information. The official estimate of area was certainly too low for the last crop, and it is quite possible that some correction of past figures is involved in the present estimate. To illustrate the differences that now exist in crop-reporting circles,

1903. Farm Right and Prosper.

The farmer's genius is shown and his prosperity measured by what he works with.

The Line Includes
**Up-to-Date Disc Plows,
Sulky & Gang Plows,
Stalk Cutters,
Subsoilers,
Planters,
Cultivators, Etc.**



LABOR-SAVING TOOLS

have the modern idea, make your lands yield the most with least labor, give you such advantages as money makers in other callings enjoy. Write our nearest house about any Labor-Saving Implements you require.

**B. F. Avery & Sons,
Manufacturers,
Louisville, Ky.
Memphis, Tenn.
New Orleans, La.
Dallas, Tex.**

JERSEY CATTLE

Bred from high-testing St. Lambert Cows.

LARGE YORKSHIRE HOGS.

The BACON BREED now leading all other breeds for making high-priced bacon.

INDIAN GAMES—The king of table fowls.

WHITE WYANDOTTES—The best general-purpose fowl.

WHITE LEGHORNS—All sold out.

Address

BOWMONT FARMS, SALBEM, VA.

Reg. HOLSTEIN-FRIESIAN

CATTLE of the Netherland, De Kol, Clothilde, Pietertje and Artis families. Heavy milkers and rich in butter fat.

Stock of all ages for sale.

Reg. BERKSHIRES From noted strains, Imported Headlight, Lord Highclere and Sunrise.

DORSET SHEEP.

B. PLYMOUTH ROCK CHICKENS, Fifteen Cockerels for sale.

N. and W. and Southern R. R.

T. O. SANDY, Burkeville, Va.

"THE OAKS" SHORTHORNS FOR SALE

2 Reg. Bull Calves; 2 Reg. Cows; 1 three-year-old Reg. Bull (immune) raised south of Petersburg, Va. All right in every particular.

B. B. BUCHANAN, Bedford City, Va.



RIPPLEY'S Improved Steam Cookers

sold under a guarantee for cooking feed, heating Poultry, Hog and Dairy houses, heating water in stock tanks or cooking feed 200 ft. from Cooker. Are made of boiler steel; no dues to rust or leak. Can be used outside or in house. Safe as a stove. Will cook 25 bu. of feed in 2 hrs. Used and endorsed by Wis., Ia., Va., Ga. and Ont. State Experiment Stations. First premium at Omaha and Toronto Expositions. Highest honors at Tex., Ill., Ind., O. Wis., Neb., Ia. and S. Dak. State Fairs. So simple children run them. We manufacture 5 styles, 16 sizes of Cookers. Prices \$5.00 to \$45.00. We pay freight on Steam Cookers. Cooker and Breeders' Supply Catalogue and prices mailed free.

RIPPLEY HARDWARE CO., Cooker Mfrs., Box 70 GRAFTON, ILLINOIS.



it may be pointed out that the Kansas State report shows wheat-seeding 3.7 per cent. less than last year, while the bureau shows an increase of 8 per cent., Illinois reports 5 per cent. less, government 6 per cent. more, Missouri reports 10 per cent. less, government 11 per cent. more.

SOUTHERN ARTISTS.

MARY WASHINGTON.

After writing a series of articles on various Southern artists, such as Allston, Sully, F. Hopkinson Smith, and others, I received some belated intelligence of a few others of which I will make, as it were, a *codicil* to my former articles. One of these artists is Mr. J. D. Woodward, a native of Virginia, though he has been for several years a resident of New York, when he has not been in Europe, adding to his culture in art. His pictures are well known in the exhibitions in New York, as well as in other art centres, and he enjoys a very good standing in his own school.

Mr Woodward is a landscape painter, mostly in oil, but has done a great deal of work for the publishers in black and white, notably for the Appleton series of "Picturesque America, Europe and the Holy Land," besides contributing illustrations to a number of other publications.

Mr. Woodward's parents lived and died in Virginia, and his brother and nephew are still prominent merchants in Richmond.

Amongst the many objects of interest in the Confederate museum in Richmond, Va., may be mentioned a set of water-colored pictures (twelve in number), by Mr. Wm. Shepherd, a Richmond (Va.) man, illustrating the life of the Confederate soldier. The subjects are as follows:

- The Mess Boy.
- Running the Blockade on Chesapeake Bay.
- Newspaper in the Trenches. 1864.
- Sunday in Camp in 1861.
- Opening of Spring Campaign.
- Company O. Stragglers.
- News from Home.
- Wounded Comrade.
- Reveillé.
- A Last Parting.
- Equipment in 1861 (black and white).
- Then there is an oil painting of Mr. Shepherd's, representing an artillery fight, and called "Virginia."
- In addition to the artistic talent and skill Mr. Shepherd has put into these pictures, he has furthermore had the advantage of having had an intimate personal knowledge of the scenes he portrayed, by which means he was enabled to depict them in a far more life-like manner.

Richmond has also produced a female artist of talent, Miss Adele Williams, who is perhaps the best known Virginia artist of the younger generation. Her work ranks high, especially in pastel portraits.

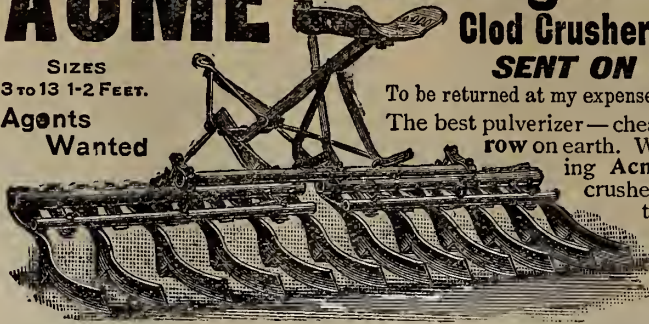
I regret that I have only been able to procure such meagre information about the above-named gifted lady, but suffice it to say she is an artist who does great credit to the South.

ACME Pulverizing Harrow

Clod Crusher and Leveler

SENT ON TRIAL

SIZES
3 to 13 1-2 Feet.
Agents
Wanted

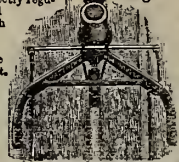


To be returned at my expense if not satisfactory. The best pulverizer—cheapest Riding Harrow on earth. We also make walking Acmes. The Acme crushes, cuts, pulverizes, turns and levels all soils for all purposes. Made entirely of cast steel and wrought iron—indestructible.

Catalog and Booklet, "An Ideal Harrow," by Henry Stewart, mailed free. I deliver free on board at New York, Chicago, Columbus, Louisville, Kansas City, Minneapolis, San Francisco, etc. Address DUANE H. NASH, SOLE MANUFACTURER - MILLINGTON, NEW JERSEY. PLEASE MENTION THIS PAPER.

POPULAR TOOLS FOR MARKET GARDENERS

SEE SEED DROP
Straightrows at uniform and perfectly regulated depth and distance apart.



NEW UNIVERSAL
Double Wheel Hoe, Cultivator, Rake, and Plow. Adjustable Arch.

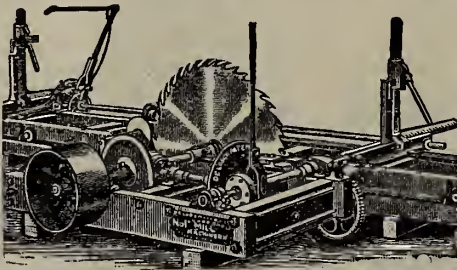


NEW UNIVERSAL
Single Wheel Hoe Cultivator, Plow and Rake, for between row cultivation. Runs Easily.



POPULAR PRICES. 1903 catalogue of latest styles now ready. Free. AMES PLOW COMPANY, 56 MARKET STREET, BOSTON, MASS.

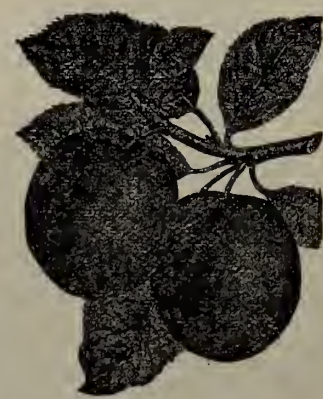
FOR SALE BY GRIFFITH & TURNER CO, BALTIMORE, MD.



Farmers' \$125 Saw Mill.

Cuts 2000 ft. lumber a day with only 4 h. p.

Our large, handsome catalogue tells all about the famous DeLoach Variable Friction Feed Saw Mills, 4 to 100 h. p., \$125 up. DeLoach Saw Mill Machinery, Planers, Shingle, Lath and Corn Mills, Water Wheels, etc. Write for catalogue and price f. o. b. your depot. DELOACH MILL MFG. Co., Box 600, Atlanta, Ga. (Branch, 120 Liberty St., New York.)



Japan Plums

And all other desirable standard and new varieties of PLUMS, APPLE, PEACH, PEAR and ORNAMENTAL TREES, SHRUBS, ROSES, Etc.

HEADQUARTERS FOR TENNESSEE PROLIFIC STRAWBERRY.

The Most Reliable Variety Ever grown in the South.

Three hundred and fifty acres under cultivation. Write us if you contemplate planting Catalogue free.

AGENTS WANTED. WRITE FOR TERMS.

W. T. HOOD & CO.,
OLD DOMINION NURSERY. RICHMOND, VA.

Latest Improved FARM IMPLEMENTS.



HAND POWER CUTTER.

These machines sell at sight. They have heavy fly wheels and make three cuts to each turn of the crank. They will cut hay, straw or fodder, and will cut from 1/2 to 2 inches. They are shipped K. D., securing the lowest possible freight rates.

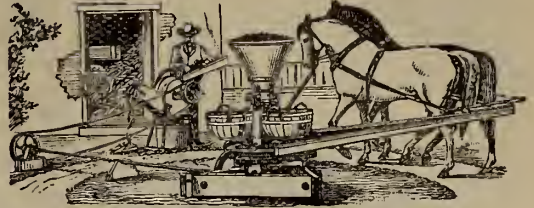
LITTLE GIANT CORN SHELLER.

The frame is made of thoroughly dry hard wood. The joints mortised tenoned and bolted. The bearings are bolted on to the frame instead of screwed. The iron work is made from the very best material.

Every piece is carefully inspected before being put on. This machine is high-grade all the way through. It is handsomely painted, striped and varnished.

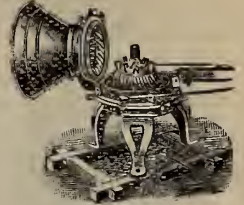


"SCIENTIFIC FEED MILLS, All Sizes."



The SCIENTIFIC Grinding Mills.

Are unequalled for grinding ear Corn, shucks on or off, Corn, Oats, Wheat and all other grains, single or mixed.

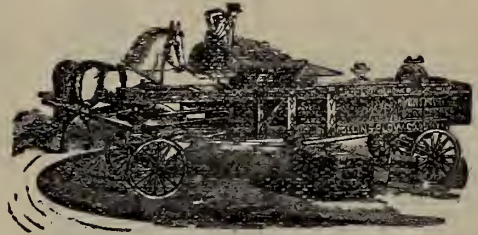


Steel Lever Harrows.



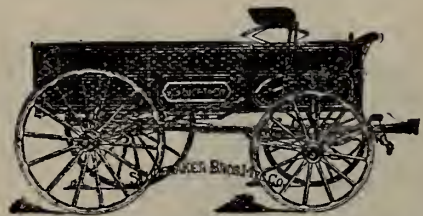
POWER MILLS In Five Sizes, 2 to 30 horse power.

"SCIENTIFIC SWEEP MILLS In Five Sizes." Geared—plain and combined, with horse power.



ELI BALING PRESSES.

58 styles and sizes. For horse or steam power. Write for prices and catalogues.



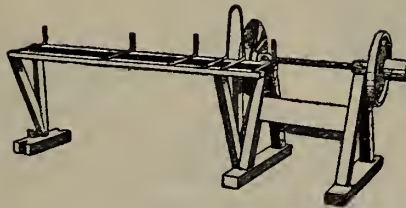
Special prices given on Studebaker and Brown Wagons, Buggies and Carts.

Studebaker Buggies, all styles, Studebaker Carriages, Studebaker Carts, Studebaker Runabouts.



Buckeye Force Pumps.

Porcelain Wood Pumps. Wood and Steel Wind Mills.



Wood Saws for Long or Short Wood. Wood or Steel Frame.

ROSS

Fodder Cutters, Fodder Shredders, Cutters for all purposes, Corn Shellers, Grinding Mills, Horse Powers and Wood Saws.



Bennett's Improved Stump Pullers.

Three sizes and 10 styles. Write for catalogues and prices.

Write for special catalogues and price on any implements wanted.

Wood Harrows—All sizes.
Disc Harrows—All sizes.
Spring Tooth Harrows—All sizes.
Acme Harrows—All sizes.
Harrows of all styles kept in stock at lowest net prices.

DON'T FORGET! All the merchants in town who claim to sell Oliver Plows and Repairs only sell the Imitation, Bogus, Cheap Goods. The only place in Richmond, Va., to buy Genuine Oliver Plows and Repairs is at 1436 and 1438 East Main Street, from



19. S.B.

HENING & NUCKOLS, Successors to CHAS. E. HUNTER, 1436-38 E. Main Street, RICHMOND, VA.

CHRISTIAN SCIENCE.

A colored man, who worked for a white man who believed in Faith Cure, Christian Science, or whatever it is called, was an hour or so late reporting to work one morning. His employer, upon inquiry, was told that he was detained at home on account of the illness of his brother. The Christian Scientist ridiculed the idea of the brother's illness, and said:

"Henry, your brother is not sick. He just thinks he is sick. If he will just use his mind, exercise his will-power, decide that he is not going to be sick, and will have faith in God, he will get right up, and you won't have to use any medicine."

This was all new and strange doctrine to Henry, but he did not think it wise to get into any kind of argument with his boss, so he scratched his head and said nothing.

The third day after this conversation, Henry remained away from work the entire day. When he reported for work the next morning, his employer said:

"Well, Henry, how is your brother today? Does he still think he is sick?"

The colored man replied: "No, sir; we buried him yesterday. I reckon by this time he thinks he's dead."—SILAS X. FLOYD, in *January Lippincott's Magazine*.

A PRUDENT SALMON.

Kitty Collins is a Newfoundland fish-wife whose sharp tongue and dealings have made her a celebrity the length of the East Shore. The man or woman is yet to be born who can beat her on any trade which savors of fish.

She lives in one of the out-ports and brings her fish to St. John's to market.

Early one spring she brought the first salmon of the season to the house of the Bishop to sell. It was a fine salmon weighing eight pounds, and the Bishop was so pleased that he gave her not only the high price she asked for it, but a little extra to show his appreciation of Kitty's enterprise.

When the salmon was dressed it was found to be stuffed with about two pounds of gravel. The Bishop was angry that the fish-wife should dare try her tricks on him, and demanded that he should be notified when she appeared again.

Kitty was not long in making a return trip.

When Kitty stood before him, the Bishop, terrible in his righteous wrath, thundered:

"What do you mean, woman, by selling me a fish filled with rocks?"

"Oh, but, sir, your Grace," replied Kitty, smiling and unruffled, "don't you remember that last gale, sir? He took on ballast, your Grace."—CAROLINE LOCKHART, in *January Lippincott's Magazine*.

PIT GAMES.

BLACK DEVILS and RED HORSES.

I have a choice lot of Cocks and Stags for sale cheap, write for prices. Eggs, \$2 per sitting. Guarantee satisfaction.

THOS. W. JARMAN, - Yancey Mills, Va.



LET THE HAWKEYE INCUBATOR Pay Your Child's Way Thro' College.

A hatch of 60 to 200 chicks, according to size of machine, every three weeks will furnish ample means, and the whole process is simple and pleasant. To be sure that the Hawkeye is the very best Incubator, let us send you one on

30 DAYS' FREE TRIAL.

Get our Free Illustrated Catalogue, or send 10c and receive in addition a year's subscription to a leading poultry paper.

HAWKEYE INCUBATOR CO., Box 49, Newton, Ia.



INCUBATORS ON 30 DAYS' TRIAL. THE WORLD'S BEST STANDARD HATCHER.



Thousands of these incubators are in successful operation in the United States, Canada, South Africa, New Zealand, Sweden, England, Holland, and Germany. These machines operate to perfection and always bring off a large brood of strong, healthy chicks. Catalogue with full particulars

free for the asking. THE STANDARD F. C. INCUBATOR CO., Dept. 5, Rochester, N. Y., U. S. A.



Highest Typewriting Possibilities

Available Only to Users

..... OF THE

SMITH PREMIER TYPEWRITER



Known Everywhere. Employed by Governments and Great Corporations which command only the best facilities. Illustrated Catalogue and "Touch" Typewriting Instruction Book Free.....

THE SMITH PREMIER TYPEWRITER COMPANY

No. 519 Eleventh St., N. W., WASHINGTON, D. C.

* THE *

SEABOARD

AIR LINE RAILWAY

OFFERS
PROFITABLE
INVESTMENTS
TO



THE MANUFACTURER,
THE STOCK RAISER,
THE DAIRYMAN,
THE FRUIT GROWER,
THE TRUCKER.



WHERE YOUR LABOR IS NOT IN VAIN.

Would a country where work can be carried on the entire year and where large profits can be realized interest you?

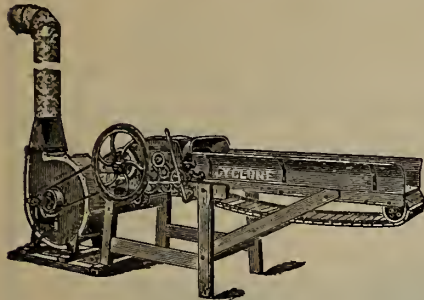
The SEABOARD Air Line Railway traverses six Southern States and a region of this character. One two cent stamp will bring handsome illustrated literature descriptive of the section.

J. B. WHITE, EDW. F. COST, CHARLES B. RYAN,
Gen. Industrial Agt., Portsmouth, Va. Traffic Mgr. Gen. Pass. Ag., Portsmouth, Va.

Agricultural Implements and Machinery

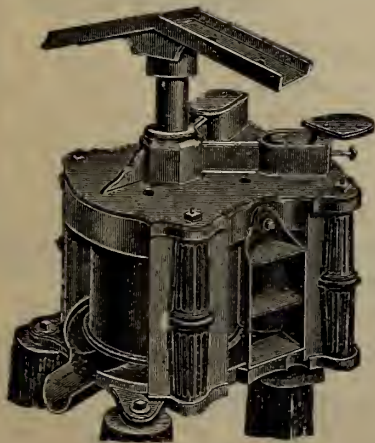


Cider Mills—with wooden crushing rollers.



CYCLONE

Feed and Ensilage Cutters. All Sizes.



Cane Mill.



Full Circle Horse-Power Press.

The Hocking Valley Cider and Wine Mills
Have crushing rollers made of wood, which impart no taste or discoloration to the juice.

Buckeye Grain and Fertilizer Drill
With hoes or disc. Drills grain of all kinds, corn, peas, grass seed and fertilizers.

Our Five-Hoe Drill
For seeding between rows of standing corn is a great success.

Continental Disc Harrows,
Changed to straight or slanting tooth without stopping team.

Ensilage and Feed Cutters.
Capacities from 600 to 16,000 pounds per hour.

The Union Cutter.
Crushes the stalk after it leaves the knives—far superior to shredding.

The Combined Feed Mill and Horse Power
Is indispensable to every farmer. Grinds corn, shelled or on cob, grain of all kinds, and is a first-class horse-power for any purpose. Three machines in one.

The McCormick Corn Binder
Works like a grain binder, cutting and tying the corn and delivering in bundles.

The McCormick Husker and Shredder.
The most complete machine of its class made. The very low price brings it within the means of all.

Corn Shellers
For hand or power, separating corn from cob.

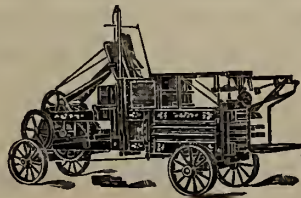
Churns—Improved Buckeye Rocker.
Unequaled for cheapness, with simplicity, strength, durability and perfect work.

Cane Mills and Evaporators.
Turned rollers, steel shafts, brass boxes, enclosed gearing. Made of special iron of great strength.

Portable Evaporators
With furnace. Pans of galvanized steel or copper.

Cucumber Wood Pumps
With porcelain-lined cylinder, for wells up to 45 feet in depth.

The Hancock Disc Plow,
Improved for 1902.
Will work in any land, and with less draft than any other disc plow.



Belt Power Press.



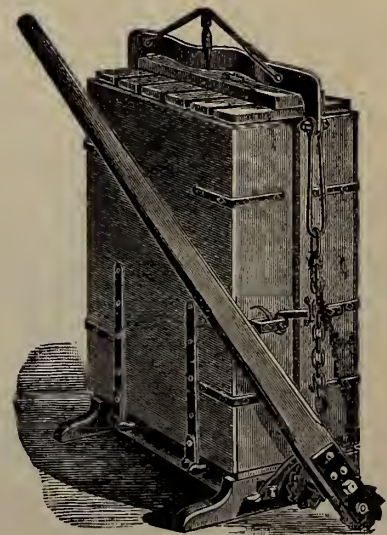
Disc Drill.



Feed Mill and Power.



Portable Evaporator.



Hand Power Press.

THE WATT PLOW CO.,

Franklin and 15th Streets,
RICHMOND, VA.

MARTHA'S SOLUTION.

A Washington housekeeper rejoices in the possession of a washerwoman of the olden style, and gets much amusement from the old woman's conversation. Recently, while counting over the clothes, the housekeeper observed Aunt Martha gazing at herself in the mirror.

"What yo' think of this bonnet, Miss Molly? It's new."

"It's very becoming," said the lady, more politely than truthfully, "but, Aunt Martha, I am afraid you are getting very extravagant. I am sure you are spending all you make in clothes."

"I certainly do that thing," said Aunt Martha, seriously. "I certainly do. You see, I saved money once, and it was stole, and I said then, 'I'll spend ez I go. ez I go,' Miss Molly, 'and then I gets the good of it'"

"But, Martha, surely you are putting by a little money, just to bury you?"

"Not much, I ain't. I ain't got none of that foolishness 'bout me. I'll enjoy myself while I live, and I guess after I'm dead I can stand it above ground jes' as long as any one kin stand havin' me."—NINA E. ALLENDER, in *Lippincott's Magazine* for January.

A LESSON TAUGHT AND LEARNED.

Not unlike some other great men, Chief-Justice Marshall gave little attention to dress or to personal pulchritude, although his face was unusually handsome. A story is told of a young man who had recently removed to Richmond. This new-comer saw in the market a rusty-looking old man making his way slowly through the entrance, and walking up to him abruptly, asked him if he would not like to make a ninepence by carrying a turkey home for him. The old man quietly took the turkey and walked behind the newly-arrived citizen without a word until the latter had reached his own gate.

"Catch!" said the young man, tossing a ninepence to his hireling.

The old man caught the ninepence, and as he turned to walk away a gentleman passing by bowed deferentially to him.

"Who is that shabby old fellow?" asked the turkey-buyer.

"The Chief-Justice of the United States," was the reply.

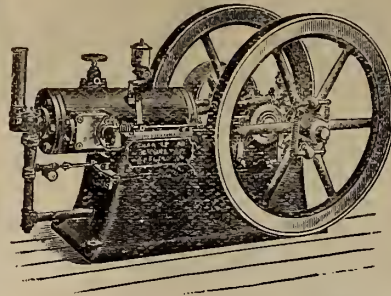
"Impossible," stammered the blunderer. "Why did he bring the turkey—why—"

"To teach you a lesson in good-breeding," interrupted the gentleman. "He will give the money away before he gets home, but I have no doubt he is enjoying the joke you have so condescendingly given him."—Z. COCKE, in *January Lippincott's Magazine*.

BOWMONT FARMS.

We invite attention to the advertisement of the Bowmont Farms, to be found elsewhere in this issue. The offering this month consists of Jerseys, large Yorkshire hogs and Indian game fowls. You will always get good stock and treatment from Col. Bowman, the proprietor.

A NEAT BINDER for your back numbers can be had for 25 cents. Address the Business Office.



CHARTER Gasoline Engines.

ALSO ON WHEELS.

The N. C. Department of Agriculture uses this engine in the portable style on their Test Farm.

AS STEADY AND RELIABLE AS A
GRANDFATHER'S CLOCK.

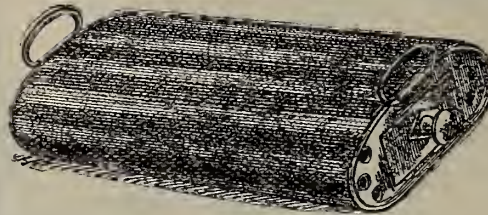
SYDNOR PUMP & WELL CO.,

Box 949.

RICHMOND, VIRGINIA.

COLD WEATHER IS HERE.

HAVE YOU A
CELEBRATED



LEHMAN HEATER?

The Greatest Comfort is to be Derived
Therefrom in Cold Weather.

NO CARRIAGE OR SLEIGH IS
COMPLETE WITHOUT ONE.

SALES ANNUALLY OVER 10,000. 175,000 IN USE.

For Booklet and other information address

LEHMAN BROTHERS, Mfrs.,
10 BOND ST., NEW YORK.
Mention Southern Planter when writing.

JAMES W. ERRINGER,
Gen'l Western Sales Agt.,
297 Wabash Ave., CHICAGO, ILL.

ASSETS, \$900,000.

Virginia Fire and Marine Insurance Company, of Richmond, Va.

Insures Against Fire and Lightning.

ALL DESCRIPTIONS OF PROPERTY IN COUNTRY AND TOWN, PRIVATE OR PUBLIC, INSURED AT FAIR RATES, ON ACCOMMODATING TERMS.

AGENCIES IN EVERY TOWN AND COUNTY.

WM. H. PALMER, PRESIDENT.

W. H. M'CARTHY, SECRETARY.



LEE'S PREPARED AGRICULTURAL LIME

For COTTON When used on land with a fair amount of vegetation or with COMPOST (which is better the crop are as good as from any Fertilizer. It prevents RUST and SHEDDING and keeps the plants green much longer in dry weather.

PEANUTS With the same conditions as above, it is a COMPLETE FERTILIZER for this CROP. Our customers say it is equal to the BEST FERTILIZERS ON THE MARKET.

DARK HEAVY TOBACCO Haul out your farm pen scrapings, plow under and broadcast 500 to 600 lbs. per acre (the earlier the better), and you will get a heavy crop of Tobacco and a fine crop of Wheat and Clover or other grass, and by proper rotation will have a rich lot for any crop.

BRIGHT TOBACCO Our customers say that 200 lbs. per acre in the drill with other Fertilizer will prevent the tobacco from FIRING and giving it a GOOD BODY and increase its value \$20 per acre For Wheat, Oats, Clover and other grass it is exceptionally good.

It prevents RUST, SCAB and SMUT in WHEAT and and all say it is the best thing for clover they ever used. Fruit Growers will find a WONDERFUL IMPROVEMENT by it use on their Orchards and Vineyards.

Our EXCELSIOR TOBACCO FERTILIZER

Has been tested for six years and has proved equal to and in some cases superior to the high-grade ammoniated goods on the market. We put in no useless filler and the farmer gets the 2000 lbs. to the ton of valuable fertilizer for the crops and THE LAND. Hence they say their succeeding crops are much better than from other fertilizers

Our SPECIAL CORN FERTILIZER For land where there is not an abundance of vegetation is equal to any.

General agents for **BLACK DEATH BUG KILLER** for destroying Potato Bugs, Tobacco Worms, and all insects injurious to vegetation; and Sifters and Insecticide distributors for applying it.

PLAIN SHELL LIME

Constantly on hand at lowest prices.

No. 1 WOOD-BURNT LIME

In car lots at lowest market price from kilns.

WRITE FOR CIRCULARS.

A. S. LEE & SON, RICHMOND, VA.

Pedigrees traced and tabulated. Catalogues compiled and circulars prepared. Special attention given registration matters pertaining to thoroughbred and trotting horses

..BY..

W. J. CARTER (Broad Rock),

P. O. Box 929, RICHMOND, VA.

Representing the

RICHMOND TIMES, Richmond, Va.
SOUTHERN PLANTER, Richmond, Va.
SPIRIT OF THE TIMES, New York.
KENTUCKY STOCK FARM, Lexington, Ky.
BREEDER AND SPORTSMAN, San Francisco, Cal.

AINSLIE CARRIAGE CO.,

Nos. 8, 10 and 12 Tenth St., RICHMOND, VA.

Building Carriages to order is our special business. Repairing and Repainting done, and best material used. A full line of all the latest styles. Orders for all classes of Vehicles solicited.

1903. IN THE STUD AT LAUREL HILL FARM. 1903.
THE FINE HACKNEY STALLION

HEIDRICK

Bay horse, foaled 1898; 16 hands high. This horse has great natural action, and is capable of getting the highest class harness horses.

FEE, \$10 00 the Season or \$15 00 to Insure.

Address **G. F. & J. BUTTON, Walker's Ford, Va.**

1903.

IN THE STUD

1903.

WEALTH, 29579.

RACE RECORD, 2:17½, Pacing.

Timed separately in 2:08 in a race at Indiana State Fair, 1902.

Bay horse, foaled 1897; 16 hands high, weight, 1,200 lbs. Sired by Gambetta Wilkes, 2:19½, dam Magnolia, by Norfolk, 3670, Wealth is grand individually and in appearance.

FEE, \$20 the Season with return privilege, or \$25 to Insure.

Address **S. F. CHAPMAN, Gordonsville, Va.**

GREAT STAKES, 25521.

RACE RECORD, 2:20, Trotting.

Bay horse, by Billy Thornhill, 2:24, dam Sweetstakes, by Sweep Stakes, 298. Great Stakes has sired Captain, 2:16½; Foxhall, 2:19½, and four others in the list. He is handsome, well-formed and sires speed uniformly.

FEE, \$25.00 for the Season of 1903

Address

W. H. NELSON, - 1417 E. Franklin St, Richmond, Va.

THE NEED OF THE FARMER'S SON.

Although the farm keeps the balance of trade in the nation's favor, furnishes two-thirds of our exports, contributes to our manufacturing supremacy by providing cheap food for our mechanics, comparatively little has been done toward educating the farmer for his work. To be sure, the United States has done more for him than any other country. In 1862, Congress endowed agricultural colleges to teach the sciences relating to agriculture. In 1867, experiment stations were provided for where research might be made into the operations of nature.

But considering that Americans pay more money for public education than any other people on earth, a comparatively small proportion of the sum is devoted to stimulating and aiding that half of our population who cultivate the soil. The tendency of primary education has been to lead the country youth away from the farm instead of helping him in the study of those sciences relating to production. It would be politic and patriotic to incorporate into the farm youth's education some knowledge that shall bear more directly upon his future life and work.—JAMES WILSON, *Secretary of Agriculture, in the Youth's Companion.*

A CA E N POINT.

Attorney Jacobi had just successfully defended Sim Walton, who was charged with stealing a watch. When they were outside the court-room, the lawyer asked Sim for the fee, which was ten dollars. Sim turned to him and said:

"Boss, I ain't got a cent."

"Well, haven't you something you can give me as security until you can raise the money?" asked Jacobi.

Sim replied: "I ain't got nuthin' but dat ol' watch I stole. You is welcome to dat, ef you'll tek hit."—SILAS XAVIER FLOYD, in *January Lippincott's Magazine.*

St. Nicholas for January starts the New Year in the happiest way. Edwin L. Sabin, Louisa M. Alcott, Howard Pyle, Clara Morris, Malcolm Douglas, Harriet Prescott Spofford, Roy Benson Richardson, Virginia Woodward Cloud, Zitella Cocke, John Bennett, Clifford Howard, Sarah M. B. Piatt, Albert Bigelow Paine, and Carolyn Wells are only part of the long list of writers and artists who contribute to the current month's feast for young folks. Really, the girl or boy who does not have St. Nicholas to read is to be pitied.

Notable among the stories in the January St. Nicholas is John Bennett's "Bobby's Newspaper," which has much of the charm that made the author's "Master Skylark" and "Barnaby Lee" immediate readers young and old. John Bennett has never visited England.

and **Feeding**

Prof. Henry's Great Book for

and Stockmen.

vered anywhere for - - \$2.00

With the SOUTHERN PLANTER, 225

Your money back

if you are not satisfied

DO YOU SUPPOSE that a company with a capital of \$500,000.00, paid in full, and the proud reputation of 36 years of continuous success, would make such an offer and not carry it out to the letter?

DO YOU SUPPOSE we would jeopardize our standing with the public and our chances of still greater success by failing to fulfil any promise we make?

DO YOU SUPPOSE we would make such an offer if we did not have the utmost confidence in the satisfying quality of our goods?

WE KNOW we can please you and save you money, for HAYNER WHISKEY goes direct from our distillery to you, with all its original richness and flavor, carrying a UNITED STATES REGISTERED DISTILLER'S GUARANTEE of PURITY and AGE and saving you the big profits of the dealers. That's why it's best for medicinal purposes. That's why it's preferred for other uses. That's why we are regularly supplying over a quarter of a million satisfied customers. That's why YOU should try it.

Direct from our distillery to YOU
Saves Dealers' Profits! Prevents Adulteration!

HAYNER WHISKEY

PURE SEVEN-YEAR-OLD RYE

4 FULL QUARTS \$3.20 EXPRESS PREPAID

We will send you FOUR FULL QUARTS of HAYNER'S SEVEN-YEAR-OLD RYE for \$3.20, and we will pay the express charges. When you receive the whiskey, try it and if you don't find it all right and as good as you ever drank or can buy from any body else at any price, then send it back at our expense and your \$3.20 will be returned to you by next mail. How could an offer be fairer? We take all the risk and stand all the expense, if the goods do not please you. Won't you let us send you a trial order? We ship in a plain sealed case; no marks to show what's inside.

Orders for Ariz., Cal., Col., Idaho, Mont., Nev., N. Mex., Ore., Utah, Wash. or Wyo., must be on the basis of 4 Quarts for \$4.00 by Express Prepaid or 20 Quarts for \$16.00 by Freight Prepaid.

Write our nearest office and do it NOW.

THE HAYNER DISTILLING COMPANY

ATLANTA, GA. DAYTON, OHIO ST. LOUIS, MO. ST. PAUL, MINN.
156 DISTILLERY, TROY, O. ESTABLISHED 1866.



THE CALL-WATT CO. PLOWS

Manufacturers of
THE CROWN
CRESCENT
AND WATT

AND REPAIRS FOR PLOWS IN GENERAL USE.

Dealers in AGRICULTURAL IMPLEMENTS, MACHINERY AND VEHICLES,
No 13 SOUTH FIFTEENTH STREET, RICHMOND, VA.
BETWEEN MAIN AND CARY STS.,

TO THE PUBLIC: My connection with the corporation known as the Watt Plow Co. has been severed, and the manufacturing of the CROWN, CRESCENT and WATT Plows, and repairs for same, is now conducted solely by THE CALL-WATT CO., of which I am general manager. The new firm being owner of all patterns for these plows, the trade-names which are duly registered under the trade-mark laws, and having purchased from The Watt Plow Co. their entire stock of said plows and repairs, is prepared to furnish same promptly, and on liberal terms.

In addition to these special plows, we hope to supply the trade with the various plows and castings now in general use; also, AGRICULTURAL IMPLEMENTS, MACHINERY, VEHICLES and HARNESS for all purposes. All articles are guaranteed to be strictly as represented.

I take this occasion to tender my thanks to all my old friends whose patronage has been bestowed upon me during the thirty years in which I have been engaged in the manufacture and sale of Agricultural Implements in this city, and solicit a continuance of their favors with the new firm. They and the public generally are assured that all business entrusted to me will receive careful and prompt attention.

M. ANFRED CALL,
Manager, The Call-Watt Co.

If You Want YOUR GOOSE TO LAY "THAT GOLDEN EGG"

FEED HER PROPERLY.

I mean buy your supplies right. You should lay aside a few Gold Pieces yourself, you might ask how it can be done—easy, dead easy—stop paying high, country prices. The mail comes to your home six times a week, I can get a letter from you every day.

GET MY PRICES, I WILL BE GLAD TO MAIL YOU OR YOUR FRIENDS MY PRICES EVERY NIGHT.

The railroads almost pass your house. Uncle Sam spends millions yearly to give you mail and railroad accomodations. You need not come to town, let Uncle Sam do your shopping. He can knock the spots out of you in buying—just try him. No matter how small your order I will be glad to have it and ship promptly. Here is what your groceries will cost you

JUST ONE-HALF WHAT YOU ARE NOW PAYING.

Arbuckle's Green Coffee	9½	Cotton-Seed Meal, Nothing Finer.		Gibson's Fine Old Rye Whiskey; fit for a king, get a quart.....	75
Granulated Sugar.....	4½	510 Tons Cotton-Seed Hulls—an excellent Winter Food, Cheap and Nutritious, per hundred..	50	O'Grady's Pure Malt. Try a bottle of Malt for that hacking cough. It is a sure cure. It is good for dyspepsia. Indigestion it cures at sight. Warms the inner man; makes new rich blood, and stimulates the whole system. It has saved many and many a man and his family. 75 a quart. The price is insignificant compared to the benefit it will do you.	
Best Family Flour.....	4 25	This is as good as Coarse Meal for stock.		Country Cured Bacon Sides.....	19½
Byrd Island—have no other.		60,000 lbs. Rock Salt for Stock—try a bag, keep it in the Trough, improves Stock very much, \$1.00 for 100 lbs.		100,000 bushels finest Oats.....	40
10,000 lbs. Nice Family Pork.....	9	Chalmer's Gelatine, 3 for	25	60,000 bushels fine Corn.....	56
7 Boxes Axle Grease.....	25	Seedless Raisins in Packages.....	9	Water-ground Corn Meal, made of the finest White Corn, and ground by one of the finest mills in Virginia. Bushel.....	72
800 Bbls. White Oil.....	12	Cleaned Currants, per lb.....	8	I have everything that is required by a farmer from a 1,000 acre farm to a mouse trap. Write for my price list that will give you more information than a gossiping woman.	
1,000 Bushels Seed Rye.....	68	New Citron for Fruit Cake.....	12	Clover Seed, prime Crimson Clover Seed	2 90
500 Tons Fine Timothy Hay, hundred	75	Home Made Mince Meat.....	8	Choice Crimson New-Crop Clover Seed	4 25
300 Tons Choice Clover Hay, hundred	70	100,000 lbs. New Mixed Nuts.....	11	Fine Winter Turf Oats (seed).....	75
10 Large Cakes Fancy Soap.....	25	Virginia Hams, Choicest of Meat. I have a Nice Lot of Hams Made in Smithfield, Va.....	14	Prime Winter Seed Oats.....	60
Crystal Washing Soda, Light, Smooth, and Durable, makes Washing Easy.....	30	Fine Sweet Cider, per gallon.....	20		
Washing Powders, 8 for.....	25	Home-Made Black Berry Brandy, 5 years old and nice.			
Fine Gun Powder Tea.....	40	Family Tonic, quart.....	20		
Ben Mocha and Java Coffee Roasted	18	Northampton Apple Brandy, 6 years old—pure—Apple Juice—nothing finer made—gallon	2 00		
Large Fat Mackerel in Nice Buckets or Kits, about 15 lbs.	1 25	Clemmer's Fine Old Mountain Rye Whiskey, double distilled, sweet and wholesome, quart.....	40		
New River Herrings, 750 fish in the barrel, Large and Fat.....	5 50	Juniper Gin, sure cure for bladder and kidney troubles; relieves the cutting, stinging ache in your back, quart.....	45		
New Cut Herrings, barrel.....	5 50				
Finest Cream Cheese.....	15				
Baker's Chocolate—2 Cakes.....	25				
New Table Raisins—6 Lbs.....	60				
Fine French Candy.....	8				
Pure Lard.....	9½				
610 Tons Pure City Made Shipstuff, hundred.....	1 00				

I have an immense stock of NEW YEARS' GOODS, CAKES, CANDIES. FRUITS of all kinds, and I will ship any quantity required.

D. O'SULLIVAN, Eighteenth and Main Sts., Richmond, Va.

but his quaintly delightful "Master Skylark" is on file in the reference library at Stratford on Avon, and devout Shakespeare pilgrims use it as a guide book.

The Review of Reviews begins a new volume with one of its characteristic numbers—a publication that could never by any possibility be mistaken for any other magazine in the world—128 pages as full of real "news" as the morning paper and yet as solid and well considered as the best of the foreign quarterlies. Venezuela is very much at the front at the opening of the New Year, and the Review not only gives space to a valuable editorial discussion of the British and German claims and the proposed modes of adjustment, but opens its pages to a full presentation of the case of the powers against the little South American State, as set forth by Mr. A. Maurice Low, a well-informed Washington journalist. The "man of the month" in international affairs is our Minister to Venezuela, Mr. Herbert W. Bowen. A character sketch of this typical diplomat of the American school, written, it is understood, by an intimate personal acquaintance, forms a noteworthy feature of the January Review. Among the subjects engaging the attention of Congress, hardly one can be named that is more important in its bearings on the public welfare than the question of protecting the grazing lands of the West, from which comes the national meat supply. This is the theme of the authoritative and judicious article from the pen of Dr. E. Benjamin Andrews, who has made a special study of the Western cattle situation. Dr. Andrews' article is accompanied by an exhaustive inquiry into the present advance in beef prices by Mr. Fred. C. Croxton, of the National Department of Labor. Another of the problems before Congress—that of the currency—is clearly outlined in a paper by Charles A. Conant describing the expedients recently resorted to by the Treasury to relieve the stringency in the money market. The rural free delivery service, the advantages of which were emphasized in President Roosevelt's message to Congress, is the subject of an illustrated article by Day Allen Willey.

THE TOBACCO MARKET.

Editor Southern Planter:

Our market will open up on Tuesday the 6th, and we look for good prices. No doubt it will be a good time to sell, as our buyers will want stock to begin work on. Receipts will be light, and we are inclined to think it will be advisable to sell what you have ready during the week, as receipts will be heavy again as soon as we have a good season.

We will be in a better fix than ever to handle your crop, having secured the services of Mr. A. O. Davis, of Wilson, N. C., as auctioneer, who is the best auctioneer to be found in the trade. We want you to come and hear him and judge for yourself. We believe he can put more life in the sale and get you better prices for your tobacco.

SILAS SHELBURNE & SON.

A CHANCE FOR THE NEEDY.

We wish to state to readers of this magazine and the public generally, that owing to the warm weather we have had this Fall, we were unable to dispose of our Stoves and Heaters which we bought in large quantities.

In order to reduce our stock, we are offering all

STOVES AND HEATERS

At greatly reduced prices.

If you intend coming to the city before the holidays, it will pay you to see us before leaving, and if you cannot come, drop us a postal and we will be glad to quote you prices.

Our stock of

FURNITURE, MATTINGS, OIL CLOTH, PICTURES, SEWING MACHINES,

and everything for HOUSEKEEPING is complete and prices LOWER THAN THE LOWEST.

Bear in mind the name and number,

M. ROSENBLOOM & SON, The Mail Order House,
1536 E. Main Street, Adjoining New Main Street Depot, RICHMOND, VA.



How are Your Eyes?

We are the largest optical establishment South, and give proper adjustment of SPECTACLES and EYE GLASSES. Complete manufacturing plant on the premises. Mail us the pieces and we will from them duplicate your Glasses. Glasses by mail our specialty.

Our PHOTO DEPARTMENT is also complete with CAMERAS, KODAKS and PHOTO SUPPLIES. Developing and printing finely executed.

Our line of GRAPHOPHONES, with latest records, OPERA GLASSES, FIELD GLASSES, Incubator and Dairy THERMOMETERS, etc., etc., is also complete. Lowest charges in all cases.

THE S. GALESKI OPTICAL CO., 9th and Main Sts., Richmond, Va.

DO YOUR TRADING..

Where an established reputation warrants continued confidence. The name of LUMSDEN on anything in the JEWELRY or SILVERWARE line is a STANDARD of QUALITY.

FINE GOLD AND DIAMOND JEWELRY, STERLING SILVERWARE AND CUT GLASS.

SIX SOLID STERLING SILVER TEA SPOONS, \$3.40. Write for our catalogue, it contains many articles on which we can save you money.

C. LUMSDEN & SON, Established 1835, 731 E. Main St., Richmond, Va.

IVANHOE POULTRY YARDS

Breeders of

Exhibition Barred Plymouth Rocks

ENGLISH CARRIERS AND HOMING PIGEONS.

For information, address

Ivanhoe Poultry Yards, Box 258, Richmond, Va.



THE RICHMOND PLUMBING AND MANTEL CO., 26 N. Ninth Street, RICHMOND, VA.,

Has just received
an entirely new
Stock and com-
plete line of

**STOVES, RANGES, FURNACES,
MANTELS, GAS and ELECTRIC
FIXTURES, FILTERS, TILING and
FIRE-PLACE TRIMMINGS.**

We are contractors for
**PLUMBING, TINNING, SHEET-METAL
K and ELECTRIC WIRING.**

Correspondence Solicited.

CALL AND INSPECT OUR SHOW-ROOMS.

Our Clubbing List.

The following list of papers and periodicals are the most popular ones in this section. We can SAVE YOU MONEY on whatever journal you wish.

DAILIES.	PRICE ALONE.	WITH PLANTER.
The Dispatch, Richmond, Va.....	\$ 3 00	\$ 3 00
The Times, " ".....	3 00	3 00
The Post, Washington, D. C.....	6 00	6 00
SEMI-WEEKLIES.		
The Dispatch, Richmond, Va.....	1 00	1 25
The World (thrice-a-week), N. Y.....	1 00	1 25
WEEKLIES.		
Harper's Weekly.....	4 00	4 00
" Bazaar.....	1 00	1 40
Montgomery Advertiser.....	1 00	1 00
Nashville American.....	50	75
The Baltimore Sun.....	1 00	1 35
Breeder's Gazette.....	2 00	1 75
Hoard's Dairyman.....	1 00	1 35
Country Gentleman.....	1 50	1 75
The Times, Richmond, Va.....	50	80
Religious Herald, Richmond, Va.....	2 00	2 25
Central Presbyterian, " ".....	2 00	2 50
Christian Advocate, " ".....	1 50	1 75
Turf, Field and Farm.....	4 00	4 00
Spirit of the Times.....	4 00	4 00
Horseman.....	3 00	3 00
SEMI-MONTHLIES.		
Wool Markets and Sheep.....	50	75
Dairy and Creamery.....	50	75
Commercial Poultry.....	50	75
All three.....	1 50	1 15
MONTHLIES.		
North American Review.....	5 00	5 00
The Century Magazine.....	4 00	4 25
St. Nicholas ".....	3 00	3 25
Lippincott's ".....	2 50	2 50
Harper's ".....	4 00	4 00
Forum ".....	3 00	3 25
Scribner's ".....	3 00	3 25
Frank Leslie's ".....	1 00	1 35
Cosmopolitan ".....	1 00	1 35
Everybody's ".....	1 00	1 35
Munsey ".....	1 00	1 35
Strand ".....	1 25	1 65
McClure's ".....	1 00	1 35
Puritan ".....	1 00	1 35
Review of Reviews.....	2 50	2 75
Leisure Hours.....	1 00	1 25
Blooded Stock.....	50	50

Where you desire to subscribe to two or more of the publications named, you can arrive at the net subscription price by deducting 50 cents from "our price with the *Planter*." If you desire to subscribe to any other publications not listed here, write us and we will cheerfully quote clubbing or net subscription rates.

Subscribers whose time does not expire until later can take advantage of our club rates, and have their subscription advanced one year from date of expiration of their subscription to either the *Planter* or any of the other publications mentioned.

Don't hesitate to write us for any information desired; we will cheerfully answer any correspondence.

We furnish no sample copies of other periodicals.

Seed House of the South.

- RED CLOVER.
- MAMMOTH CLOVER.
- CRIMSON CLOVER.
- WHITE CLOVER.
- LUCERNE CLOVER.
- ALSYKE CLOVER.
- BOKHARA CLOVER.
- JAPAN CLOVER.
- BUR CLOVER.



- TIMOTHY.
- ORCHARD GRASS.
- RED TOP or HERDS GRASS.
- KENTUCKY BLUE GRASS.
- RANDALL GRASS.
- TALL MEADOW OAT GRASS.
- JOHNSON GRASS.
- GERMAN MILLET.
- BUCKWHEAT.
- OATS and CANE SEED.

"Whatsoever One Soweth, That Shall He Reap."
 We sell strictly reliable FIELD AND GARDEN SEEDS of every variety at Lowest Market rates, included in which are **RAGLAND'S PEDIGREE TOBACCO SEEDS.**

WE ALSO SELL

Our Own Brands of Fertilizers

For Tobacco, Corn, Wheat, Potatoes, &c.
 Pure Raw-Bone Meal, Nova Scotia and Virginia Plaster and Fertilizing Materials generally.

Parties wishing to purchase will find it to their interest to price our goods. Samples sent by mail when desired.

Wm. A. Miller & Son, 1016 Main Street LYNCHBURG, VA.

Headquarters for Nursery Stock.

WHOLESALE AND RETAIL.

We make a specialty of handling dealers' orders.

ALL STOCK TRUE TO NAME.

- | | | | |
|-----------|-------------|---------------|----------------|
| Apples, | Nectarines, | Pecans, | Ornamental and |
| Pears, | Cherry, | Chestnuts, | Shade Trees, |
| Peach, | Quinces, | Walnuts, | Evergreens, |
| Plum, | Almonds, | Small Fruits, | Roses, Etc. |
| Apricots, | | | |

CALIFORNIA PRIVET, for Hedging. WRITE FOR CATALOGUE.

..AGENTS WANTED..

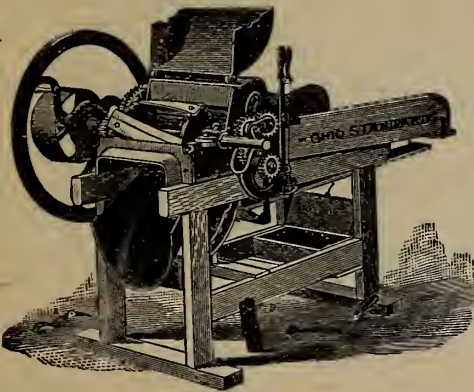
FRANKLIN DAVIS NURSERY Co., Baltimore, Md.

WHY USE DANGEROUS BARB WIRE

WHEN AN
ATTRACTIVE WOVEN
WIRE FENCE
CAN BE BOUGHT AT EVEN
LESS COST?

		55 INCH.	
	47 IN.		9
	39 IN.		8
	32 IN.		7
	26 IN.		6
	20 IN.		5½
			5
			4½
			4
			3½
			3

THE AMERICAN FIELD FENCING Is made in many heights and styles for turning the smallest to the largest animal. Write for special catalogue and prices.



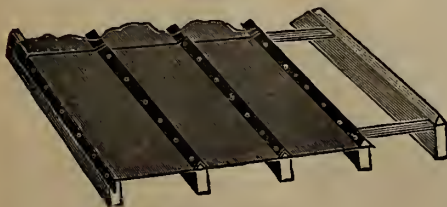
THE IDEAL FEED MILL AND POWER COMBINED

Has no equal for grinding shelled grain, corn and cob into excellent feed. The Horse-Power is very useful for running other machinery as well. A full line of mills for horse and steam power.

THE No. 19 IDEAL MILL

For one horse. A very useful size for small farms. Price, \$15.00.

PLOWS.—Try an "Imperial" and you will not want any other. It is admitted by all who have used it to be the best in the world.



"V" CRIMPED STEEL ROOFING

Made in lengths of from 5 to 10 feet. The most economical roof for barns and all out houses.

FANNING MILLS.—We can strongly recommend the "LYONS" for cleaning any kind of grain or grass seed. Does its work clean, and praised by every one who has used it.

If you are needing a wagon, try a "**BIRDSELL**" with steel skeins, and be convinced there is none better made. All irons used are either wrought or steel. The price too is very reasonable.

The finest and largest stock of **BUGGIES, CARRIAGES, HARNESS and SADDLES** in the South. Write for special catalogue.

EVERYTHING THE FARM NEEDS WE CAN SUPPLY, AND THAT AT A CLOSE PRICE.

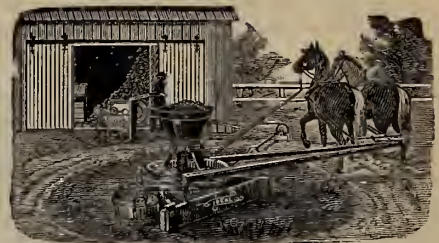
THE IMPLEMENT CO., 1302 and 1304 E. Main St., Richmond, Va.

PEA HULLERS.—It will pay to inspect the "STAR." Will hull and clean from 10 to 15 bushels of peas every hour.

DISC HARROWS.—Send for special catalogue of the "THOMAS," lightest draft and strongest harrow made.

OHIO FEED AND ENSILAGE CUTTER.

For hand or power. The strongest, simplest and best made. Write for prices, catalogues and testimonials.



JOHN P. BRANCH, President. JOHN KERR BRANCH, Vice-President. JOHN F. GLENN, Cashier.
 DIRECTORS. { John P. Branch, Fred. W. Scott, C. S. Stringfellow, A. S. Buford, John Kerr Branch, J. P. George, Thos. B. Scott,
 B. W. Branch, B. B. Munford, Jas. H. Dooley, Alex. Hamilton, R. C. Morton, S. T. Morgan, A. Pizzini, Jr

CAPITAL STOCK, \$200,000 00 No. 1754. SURPLUS AND PROFITS, \$600,000.00

MERCHANTS NATIONAL BANK, Richmond, Va.

UNITED STATES, STATE, CITY DEPOSITORY.

Comparative Statements for the Following Years.

ASSETS.

CLOSE OF BUSINESS ON.....	June 30, 1877.	June 30, 1882.	June 30, 1887.	June 30, 1892.	June 30, 1897.	June 30, 1902.
Time and Demand Loans.....	\$310,427 34	\$664,880 05	\$464,666 32	\$1,161,336 11	\$1,125,610 04	\$1,284,060 45
Real Estate, Furniture etc.....	1,886 50	1,825 42	60,000 00	69,138 77	83,236 07	74,088 34
5% Redemption Fund.....	2,250 00	11,800 00	9,000 00	9,000 00	9 00 00	10,000 00
United States Bonds.....	50,000 00	200,000 00	700,000 00	421,000 00	400,112 00	961,260 00
Premium on U. S. Bonds.....	5,000 00	.....	80,000 00	34,000 00	33,553 55	22,763 48
Miscellaneous Stocks and Bonds.....	25,455 30	23,501 49	56,208 00	69,636 21	174,076 44	686,430 48
Cash and Due from Banks.....	94,342 11	152,616 15	189,724 83	485,656 32	785,187 42	1,023,506 10
TOTAL.....	\$489,361 25	\$1,054,623 11	\$1,559,599 15	\$2,249,767 41	\$2,610,775 52	\$4,062,108 85

LIABILITIES.

CLOSE OF BUSINESS ON.....	June 30, 1877.	June 30, 1882.	June 30, 1887.	June 30, 1892.	June 30, 1897.	June 30, 1902.
Capital Stock.....	\$200,000 00	\$200,000 00	\$200,000 00	\$200,000 00	\$200,000 00	\$200,000 00
Surplus and undivided Profits.....	15,149 40	56,551 32	105,676 85	186,758 68	277,132 87	588,017 55
Circulation.....	45,000 00	180,000 00	180,000 00	177,900 00	176,400 00	200,000 00
Deposits.....	226,711 85	618,071 79	1,073,922 30	1,685,108 73	1,957,242 65	3,074,091 30
Re-discounts.....	2,500 00	.....	.....	.....	.....	.....
TOTAL.....	\$489,361 25	\$1,054,623 11	\$1,559,599 15	\$2,249,767 41	\$2,610,775 52	\$4,062,108 85

BUSINESS PAPER DISCOUNTED FOR CUSTOMERS ON FAVORABLE TERMS.

▲ specialty made of collections in Virginia, West Virginia, Kentucky, Tennessee, and North Carolina. Daily and direct communication with over three-fourths of the banking points in Virginia. Being the largest depository for banks between Baltimore and New Orleans, this bank offers superior facilities for direct and quick collections.

INTEREST PAID ON DEPOSITS BY AGREEMENT.

CORRESPONDENCE SOLICITED.

WE WOULD LIKE TO HAVE YOUR BUSINESS.

CONTENTS.

FARM MANAGEMENT:

Editorial—1903..... 1
 " Work for the Month..... 3
 Random Notes..... 4
 Fertilizers do Not Replace Tillage..... 5
 Enquirer's Column (Detail Index, page 41)..... 6

TRUCKING, GARDEN AND ORCHARD:

Editorial—Work for the Month..... 8
 Garden and Orchard Notes..... 8
 Virginia State Horticultural Society..... 10
 Pecans in Virginia..... 11
 Nut-Growing in Virginia..... 11

LIVE STOCK AND DAIRY:

The Dairy Breeds of Cattle..... 12
 The Dual-Purpose Breeds of Cattle..... 17
 Special Beef Breeds for Southern Farmers'..... 22
 Foot and Mouth Disease in Cattle..... 27
 Breeds of Sheep for the South..... 28

Devon Cattle..... 32
 The Brood Sow..... 33
THE POULTRY YARD:
 Feeding Experiments..... 35
THE HORSE:
 Hackneys Still in Demand..... 36
 Notes..... 36
 Seeding Grass..... 37
MISCELLANEOUS:
 Editorial—Fence Laws in Virginia..... 38
 Irrigation..... 38
 Irrigation Problems in Virginia..... 39
 Irrigation..... 40
 Editorial—Our Illustrations..... 40
 The International Stock Show, Chicago, 1903..... 40
 PUBLISHER'S NOTES..... 41
 ADVERTISEMENTS..... 41

A TIDAL WAVE HAS SET IN FOR THE WALTER A. WOOD MACHINES

IN 1903.



Let the farmer try any machine he may and he will inevitably come back to the **OLD RELIABLE** with its up-to-date improvements.

Competition tried it single handed and now they combine, but true merit cannot be overcome.

THE WALTER A. WOOD MOWERS, BINDERS, HAY RAKES, TEDDERS and CORN HARVESTERS and BINDERS

Are world-famous for excellency of construction, superior work, and lasting quality of parts

Every piece of every machine made as good as the best; Excelled by none.

**HAND DUMP and SELF DUMP, ALL STEEL HAY RAKES.
THE GREATEST HAY TEDDER MADE.
CORN HARVESTER and BINDER OF THE LATEST IMPROVED TYPE.**

The Walter A. Wood Wheat Harvester and Binder

Is Simply Without a Peer.

This machine is built to stand hard work and rough ground. It is constructed to save all the grain in thin and short straw.

It is made to stand for years and not for a single season

The largest dealers all over the country are taking the agency for these machines for 1903. This tells the story. They have seen the tidal wave.



WALTER A. WOOD MOWING and REAPING MACHINE CO., Southern Office, Richmond, Va.

Send for Catalogues, describing every machine in detail.

The **NORTHWESTERN** MUTUAL LIFE INSURANCE CO.

ORGANIZED 1857.

PURELY MUTUAL.

This Company has paid over ONE MILLION DOLLARS in Virginia, in death losses alone, without contest or compromise of a single policy.

Ask any policy-holder of the NORTHWESTERN how he likes the Company. We have policy-holders in every county in the State, whose names and other information on the subject will be furnished to any one contemplating life insurance, or desiring to represent

THE BEST COMPANY FOR THE POLICY-HOLDER.

T. ARCHIBALD CARY, General Agent, 1201 E. Main Street, Richmond, Va.

STRONG, HEALTHY AND SLEEK HORSES



Are the inevitable result of giving OWENS & MINOR'S DIXIE CONDITION POWDERS. If you wish fat and smooth Cattle and healthy Milch Cows, give

DIXIE CONDITION POWDERS.

For RHEUMATISM, SPRAINS, STRAINS and all PAINS use

DIXIE NERVE AND BONE LINIMENT—Best on earth for Man or Beast. Large Bottle 25 cts.; everywhere.

OWENS & MINOR DRUG CO., Richmond, Va.

VIRGINIA-CAROLINA CHEMICAL CO.

Southern Manufacturers
—OF—

FERTILIZERS

—FOR—

Southern Farmers.

THE FACTS:

Largest producers of material!
Largest makers of Fertilizers!

THE RESULTS:

Better Fertilizers! Lowering prices!
Increasing sales!

Sales Offices: RICHMOND, VA., NORFOLK, VA., DURHAM, N. C.
AGENTS, - - - - EVERYWHERE.

The STATE BANK OF VIRGINIA JOHN S. ELLETT, Presid't. WM. M. HILL, Cash
CAPITAL, \$500,000. SURPLUS, \$240,000.
RICHMOND. - VIRGINIA